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Gly Met His Arg Glu Thr Met Leu Gly Phe Ser Tyr Phe Leu Ser Phe
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Phe Leu His Asn Asp Gln Leu Tyr Val Asn Glu Ala Pro Ile Asn Tyr
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Thr Asn Val Ala Thr Asp Lys Gly Val Ile His Gly Leu Gly Lys Val
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Leu Glu Ile Gln Lys Asn Arg Cys Asp Asn Asn Asp Thr Thr Ile Ile
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Arg Gly Arg Cys Arg Thr Cys Ser Ser Glu Leu Thr Cys Pro Phe Gly
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Cys Gln Pro Cys Pro Gly Asn Ala Gln Asn Val Cys Phe Gly Asn Gly
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Gly Phe Ser Gly Thr Ala Cys Glu Thr Cys Thr Glu Gly Lys Tyr Gly
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Lys Cys Ala Ala Gly Phe Gln Gly Asn Gly Thr Ile Cys Thr Ala Ile
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Asn Ala Cys Glu Ile Ser Asn Gly Gly Cys Ser Ala Lys Ala Asp Cys
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Thr Gly Asp Gly Ile Val Cys Leu Glu Ile Asn Pro Cys Leu Glu Asn
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Gln Ala Ala Cys Asn Cys Leu Pro Ala Tyr Thr Gly Asp Gly Lys Val
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Trp Asp Lys Tyr Gly Leu Met Pro Gln Val Leu Arg Tyr His Val Val
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Ala Cys His Gln Leu Leu Leu Glu Asn Leu Lys Leu Ile Ser Asn Ala
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Gln Asp Ser Gly Leu Leu Ser Val Ile Thr Asp Pro Ile His Thr Pro
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Val Thr Leu Phe Trp Pro Thr Asp Gln Ala Leu His Ala Leu Pro Ala
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Glu Gln Gln Asp Phe Leu Phe Asn Gln Asp Asn Lys Asp Lys Leu Lys
       1955                1960                1965

Glu Tyr Leu Lys Phe His Val Ile Arg Asp Ala Lys Val Leu Ala Val
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Asp Leu Pro Thr Ser Thr Ala Trp Lys Thr Leu Gln Gly Ser Glu Leu
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Ser Val Lys Cys Gly Ala Gly Arg Asp Ile Gly Asp Leu Phe Leu Asn
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Gly Gln Thr Cys Arg Ile Val Gln Arg Glu Leu Leu Phe Asp Leu Gly
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Tyr His Leu Cys Ser Ala Gly Trp Leu Glu Thr Gly Arg Val Ala Tyr
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Pro Thr Ala Phe Ala Ser Gln Asn Cys Gly Ser Gly Val Val Gly Ile
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Val Asp Tyr Gly Pro Arg Pro Asn Lys Ser Glu Met Trp Asp Val Phe
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Ser His Leu Thr Leu Trp Pro Val His Asp Ser Lys His Trp Gly Ser
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Leu Arg His Gln Asn Met Asn Gly Thr Cys Ser Ser Gly Gly Gly Lys
    130                 135                 140

Gly Asp Pro Asp Val Tyr Gln Asn Gly Leu Ile Phe His Gly Gly Gly
145                 150                 155                 160

Thr Ser Gly Gly Leu Ser Ser Ser Arg Asn Arg Arg Ser Ser Val Lys
                165                 170                 175

Arg Pro Glu Lys Trp Lys Gly Asp Asp Arg Asp Gly Gly Gly Lys Glu
            180                 185                 190

Gly Gln Gln Arg Arg Arg Ala Asp Thr Glu Ser Ser Leu Gln Arg Gly
        195                 200                 205

His Ile Lys Thr Pro Leu Pro His Arg Gln Gly Glu Ala Arg Ile Thr
    210                 215                 220

Glu Thr Thr Gly Asn Cys Val Ser Ala Gly Met Thr Gly Thr Asn Ala
225                 230                 235                 240

Asn His Thr Lys Val His Pro Thr Val Gln Ser Leu Thr Glu Tyr Asp
                245                 250                 255

Ser Phe Gln Thr His Ser Thr Ser Arg Leu Lys Glu Phe Glu Lys Gln
            260                 265                 270

Gln Val Lys Glu Arg Phe Ser Asp Pro Pro Leu Met Gln Ala Ile Lys
        275                 280                 285

Pro Ser His Glu Lys Tyr Pro Pro Tyr Ala Gln Arg Lys Gly Thr Ser
    290                 295                 300

Leu Ser Pro Lys Thr Gln Gly His Gly Asp Asp Glu Gln Ala Leu Leu
305                 310                 315                 320

Ser Phe Leu His Ser Ile Thr Leu Ser Leu Tyr Leu Tyr Pro Thr Thr
                325                 330                 335

Phe Phe His Asp Ser Pro Val Phe Ile Lys Pro Gly Ile Lys Thr Leu
            340                 345                 350
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Arg Leu Asn His Phe Phe Gly Ser Ser Phe Pro Tyr Glu Gly Ser Ser
        355                 360                 365

Val Ile Xaa Xaa Met Gly Ile Glu Val Trp Lys Asn Trp Cys Gln Asn
    370                 375                 380

Ala Asp Thr Leu Ala Ala Ala Pro Ala Pro Ser Leu Asn Val Gln Pro
385                 390                 395                 400

Cys Ser Ala Gln Lys Ile Pro Asp Val Arg Leu Pro Leu Lys Met Lys
                405                 410                 415

Thr Asn Trp Asn Ala Asn Ala Phe Pro Ile Thr Glu Ala Met Ala Asn
            420                 425                 430

Thr Ala Thr Pro Ser Ile His Val Tyr Glu Lys Ser Ala Thr Leu Met
        435                 440                 445

Leu Ile Val Arg Thr Trp Asp Gln Ile Gly Thr Val Val His Ala Lys
    450                 455                 460

Lys Ala Thr Val Gly Met Ala Lys Cys Ala Cys Leu Trp Thr Pro Ala
465                 470                 475                 480

Lys Leu Thr Leu Glu Thr Ala Leu Gln Ser Leu Gln Cys Ala Asn Met
                485                 490                 495

Met Gly Leu Asp Arg Cys Ile Cys Gln Lys Gly Tyr Val Gly Asp Gly
            500                 505                 510

Leu Thr Cys Tyr Gly Asn Ile Met Glu Arg Leu Arg Glu Leu Asn Thr
        515                 520                 525

Glu Pro Arg Gly Lys Trp Gln Gly Arg Leu Thr Ser Phe Ile Ser Leu
    530                 535                 540

Leu Glu Ser Ile Gln Ile Val Ser Val Gln Leu Ser Glu Phe Ser Gln
545                 550                 555                 560

Arg Glu Pro Thr Cys Val Asn Thr Lys Ser Ile Ala Ser Asn Leu Glu
                565                 570                 575

Gly Pro Leu Val Pro Leu Ser Asn His Tyr Pro Leu Gln Val Asn Glu
            580                 585                 590

Leu Leu Val Asp Asn Lys Ala Ala Gln Tyr Phe Val Lys Leu His Ile
        595                 600                 605

Ile Ala Gly Gln Met Asn Ile Glu Tyr Met Asn Asn Thr Asp Met Phe
    610                 615                 620

Tyr Thr Leu Thr Gly Lys Ser Gly Glu Ile Phe Asn Ser Asp Lys Asp
625                 630                 635                 640

Asn Gln Ile Lys Leu Lys Leu His Gly Gly Lys Lys Lys Val Lys Ile
                645                 650                 655

Ile Gln Gly Asp Ile Ile Ala Ser Asn Gly Leu Leu His Ile Leu Asp
            660                 665                 670

Arg Ala Met Asp Lys Leu Glu Pro Thr Phe Glu Ser Asn Asn Glu Glu
        675                 680                 685
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Thr Asn Leu Gly His Ala Leu Asp Glu Asp Gly Val Gly Gly Pro Tyr
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Thr Ile Phe Val Pro Asn Asn Glu Ala Leu Asn Asn Met Lys Asp Gly
705                 710                 715                 720

Thr Leu Asp Tyr Leu Leu Ser Pro Glu Leu Glu Val Ala Thr Leu Ile
                725                 730                 735

Ser Thr Pro His Ile Arg Ser Met Ala Asn Gln Leu Ile Gln Phe Asn
            740                 745                 750

Thr Thr Asp Asn Gly Gln Ile Leu Ala Asn Asp Val Ala Met Glu Glu
        755                 760                 765

Ile Glu Ile Thr Ala Lys Asn Gly Arg Ile Tyr Thr Leu Thr Gly Val
    770                 775                 780

Leu Ile Pro Pro Ser Ile Val Pro Ile Leu Pro His Arg Cys Asp Glu
785                 790                 795                 800

Thr Lys Arg Glu Met Lys Leu Gly Thr Cys Val Ser Cys Ser Leu Val
                805                 810                 815

Tyr Trp Ser Arg Cys Pro Ala Asn Ser Glu Pro Thr Ala Leu Phe Thr
            820                 825                 830

His Arg Cys Val Tyr Ser Gly Arg Phe Gly Ser Leu Lys Ser Gly Cys
        835                 840                 845

Ala Arg Tyr Cys Asn Ala Thr Val Lys Cys Ala Asp Ser Leu Gly Gly
    850                 855                 860

Asn Gly Thr Cys Ile Cys Glu Glu Gly Phe Gln Gly Ser Gln Cys Gln
865                 870                 875                 880

Phe Cys Ser Asp Pro Asn Lys Tyr Gly Pro Arg Cys Asn Lys Lys Cys
                885                 890                 895

Leu Cys Val His Gly Thr Cys Asn Asn Arg Ile Asp Ser Asp Gly Ala
            900                 905                 910

Cys Leu Thr Gly Thr Cys Arg Asp Gly Ser Ala Gly Arg Leu Cys Asp
        915                 920                 925

Lys Gln Thr Ser Ala Cys Gly Pro Tyr Val Gln Phe Cys His Ile His
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Ala Thr Cys Glu Tyr Ser Asn Gly Thr Ala Ser Cys Ile Cys Lys Ala
945                 950                 955                 960

Gly Tyr Glu Gly Asp Gly Thr Leu Cys Ser Glu Met Asp Pro Cys Thr
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Gly Leu Thr Pro Gly Gly Cys Ser Arg Asn Ala Glu Cys Ile Lys Thr
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Gly Thr Gly Thr His Thr Cys Val Cys Gln Gln Gly Trp Thr Gly Asn
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Gly Arg Asp Cys Ser Glu Ile Asn Asn Cys Leu Leu Pro Ser Ala Gly
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Glu Cys Glu Cys Lys Lys Gly Phe Arg Gly Asn Gly Ile Asp Cys Glu
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Pro Ile Thr Ser Cys Leu Glu Gln Thr Gly Lys Cys His Pro Leu Ala
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Ser Cys Gln Ser Thr Ser Ser Gly Val Trp Ser Cys Val Cys Gln Glu
        1075                1080                1085

Gly Tyr Glu Gly Asp Gly Phe Leu Cys Tyr Gly Asn Ala Ala Val Glu
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Leu Ser Phe Leu Ser Glu Ala Ala Ile Phe Asn Arg Trp Ile Asn Asn
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Ala Ser Leu Gln Pro Thr Leu Ser Ala Thr Ser Asn Leu Thr Val Leu
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Val Pro Ser Gln Gln Ala Thr Glu Asp Met Asp Gln Asp Glu Lys Ser
            1140                1145                1150

Phe Trp Leu Ser Gln Ser Asn Ile Pro Ala Leu Ile Lys Tyr His Met
        1155                1160                1165

Leu Leu Gly Thr Tyr Arg Val Ala Asp Leu Gln Thr Leu Ser Ser Ser
    1170                1175                1180

Asp Met Leu Ala Thr Ser Leu Gln Gly Asn Phe Leu His Leu Ala Lys
1185                1190                1195                1200

Val Asp Gly Asn Ile Thr Ile Glu Gly Ala Ser Ile Val Asp Gly Asp
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Asn Ala Ala Thr Asn Gly Val Ile His Ile Ile Asn Lys Val Leu Val
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Pro Gln Arg Arg Leu Thr Gly Ser Leu Pro Asn Leu Leu Met Arg Leu
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Glu Gln Met Pro Asp Tyr Ser Ile Phe Arg Gly Tyr Ile Ile Gln Tyr
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Asn Leu Ala Asn Ala Ile Glu Ala Ala Asp Ala Tyr Thr Val Phe Ala
1265                1270                1275                1280

Pro Asn Asn Asn Ala Ile Glu Asn Tyr Ile Arg Glu Lys Lys Val Leu
                1285                1290                1295

Ser Leu Glu Glu Asp Val Leu Arg Tyr His Val Val Leu Glu Glu Lys
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Leu Leu Lys Asn Asp Leu His Asn Gly Met His Arg Glu Thr Met Leu
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Gly Phe Ser Tyr Phe Leu Ser Phe Phe Leu His Asn Asp Gln Leu Tyr
    1330                1335                1340

Val Asn Glu Ala Pro Ile Asn Tyr Thr Asn Val Ala Thr Asp Lys Gly
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Val Ile His Gly Leu Gly Lys Val Leu Glu Ile Gln Lys Asn Arg Cys
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Asp Asn Asn Asp Thr Thr Ile Ile Arg Gly Arg Cys Arg Thr Cys Ser
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Ser Glu Leu Thr Cys Pro Phe Gly Thr Lys Ser Leu Gly Asn Glu Lys
       1395                1400                1405

Arg Arg Cys Ile Tyr Thr Ser Tyr Phe Met Gly Arg Arg Thr Leu Phe
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Ile Gly Cys Gln Pro Lys Cys Val Arg Thr Val Ile Thr Arg Glu Cys
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Cys Ala Gly Phe Phe Gly Pro Gln Cys Gln Pro Cys Pro Gly Asn Ala
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Gln Asn Val Cys Phe Gly Asn Gly Ile Cys Leu Asp Gly Val Asn Gly
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Thr Gly Val Cys Glu Cys Gly Glu Gly Phe Ser Gly Thr Ala Cys Glu
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Thr Cys Thr Glu Gly Lys Tyr Gly Ile His Cys Asp Gln Ala Cys Ser
   1490                1495                1500

Cys Val His Gly Arg Cys Asn Gln Gly Pro Leu Gly Asp Gly Ser Cys
1505                1510                1515                1520

Asp Cys Asp Val Gly Trp Arg Gly Val His Cys Asp Asn Ala Thr Thr
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Glu Asp Asn Cys Asn Gly Thr Cys His Thr Ser Ala Asn Cys Leu Thr
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Asn Ser Asp Gly Thr Ala Ser Cys Lys Cys Ala Ala Gly Phe Gln Gly
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Asn Gly Thr Ile Cys Thr Ala Ile Asn Ala Cys Glu Ile Ser Asn Gly
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Gly Cys Ser Ala Lys Ala Asp Cys Lys Arg Thr Thr Pro Gly Arg Arg
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Val Cys Thr Cys Lys Ala Gly Tyr Thr Gly Asp Gly Ile Val Cys Leu
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Glu Ile Asn Pro Cys Leu Glu Asn His Gly Gly Cys Asp Lys Asn Ala
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Glu Cys Thr Gln Thr Gly Pro Asn Gln Ala Ala Cys Asn Cys Leu Pro
       1635                1640                1645

Ala Tyr Thr Gly Asp Gly Lys Val Cys Thr Leu Ile Asn Val Cys Leu
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Thr Lys Asn Gly Gly Cys Ser Glu Phe Ala Ile Cys Asn His Thr Gly
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Gln Val Glu Arg Thr Cys Thr Cys Lys Pro Asn Tyr Ile Gly Asp Gly
               1685                1690                1695
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Phe Thr Cys Arg Gly Ser Ile Tyr Gln Glu Leu Pro Lys Asn Pro Lys
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Thr Ser Gln Tyr Phe Phe Gln Leu Gln Glu His Phe Val Lys Asp Leu
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Val Gly Pro Gly Pro Phe Thr Val Phe Ala Pro Leu Ser Ala Ala Phe
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Asp Glu Glu Ala Arg Val Lys Asp Trp Asp Lys Tyr Gly Leu Met Pro
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Gln Val Leu Arg Tyr His Val Val Ala Cys His Gln Leu Leu Leu Glu
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Asn Leu Lys Leu Ile Ser Asn Ala Thr Ser Leu Gln Gly Glu Pro Ile
          1780                1785                1790

Val Ile Ser Val Ser Gln Ser Thr Val Tyr Ile Asn Asn Lys Ala Lys
       1795                1800                1805

Ile Ile Ser Ser Asp Ile Ile Ser Thr Asn Gly Ile Val His Ile Ile
   1810                1815                1820

Asp Lys Leu Leu Ser Pro Lys Asn Leu Leu Ile Thr Pro Lys Asp Asn
1825                1830                1835                1840

Ser Gly Arg Ile Leu Gln Asn Leu Thr Thr Leu Ala Thr Asn Asn Gly
               1845                1850                1855

Tyr Ile Lys Phe Ser Asn Leu Ile Gln Asp Ser Gly Leu Leu Ser Val
          1860                1865                1870

Ile Thr Asp Pro Ile His Thr Pro Val Thr Leu Phe Trp Pro Thr Asp
       1875                1880                1885

Gln Ala Leu His Ala Leu His Ala Leu Pro Ala Glu Gln Gln Asp Phe
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Leu Phe Asn Gln Asp Asn Lys Asp Lys Leu Lys Glu Tyr Leu Lys Phe
1905                1910                1915                1920

His Val Ile Arg Asp Ala Lys Val Leu Ala Val Asp Leu Pro Thr Ser
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Thr Ala Trp Lys Thr Leu Gln Gly Ser Glu Leu Ser Val Lys Cys Gly
          1940                1945                1950

Ala Gly Arg Asp Ile Gly Asp Leu Phe Leu Asn Gly Gln Thr Tyr Arg
       1955                1960                1965

Ile Val Gln Arg Glu Leu Leu Phe Asp Leu Gly Val Ala Tyr Gly Ile
   1970                1975                1980

Asp Cys Leu Leu Ile Asp Pro Thr Leu Gly Gly Arg Cys Asp Thr Phe
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Ser Cys Pro Arg Trp Ser Lys Pro Lys Gly Val Lys Gln Lys Cys Leu
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Ser Leu Val Ile Gln Ile Pro Arg Cys Cys Lys Gly Tyr Phe Gly Arg
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Asp Cys Gln Ala Cys Pro Gly Gly Pro Asp Ala Pro Cys Asn Asn Arg
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Gly Val Cys Leu Asp Gln Tyr Ser Ala Thr Gly Glu Cys Lys Cys Asn
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Thr Gly Phe Asn Gly Thr Ala Cys Glu Met Cys Trp Pro Gly Arg Phe
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Gly Pro Asp Cys Leu Pro Cys Gly Cys Ser Asp His Gly Gln Cys Asp
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Asp Gly Ile Thr Gly Ser Gly Gln Cys Leu Cys Glu Thr Gly Trp Thr
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Gly Pro Ser Cys Asp Thr Gln Ala Val Leu Pro Ala Val Cys Thr Pro
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Pro Cys Ser Ala His Ala Thr Cys Lys Glu Asn Asn Thr Cys Glu Cys
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Asn Leu Asp Tyr Glu Gly Asp Gly Ile Thr Cys Thr Val Val Asp Phe
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Cys Lys Gln Asp Asn Gly Gly Cys Ala Lys Val Ala Arg Cys Ser Gln
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Lys Gly Thr Lys Val Ser Cys Ser Cys Gln Lys Gly Tyr Lys Gly Asp
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Gly His Ser Cys Thr Glu Ile Asp Pro Cys Ala Asp Gly Leu Asn Gly
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Gly Cys His Glu His Ala Thr Cys Lys Met Thr Gly Pro Gly Lys His
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Lys Cys Glu Cys Lys Ser His Tyr Val Gly Asp Gly Leu Asn Cys Glu
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Pro Glu Gln Leu Pro Ile Asp Arg Cys Leu Gln Asp Asn Gly Gln Cys
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His Ala Asp Ala Lys Cys Val Asp Leu His Phe Gln Asp Thr Thr Val
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Gly Val Phe His Leu Arg Ser Pro Leu Gly Gln Tyr Lys Leu Thr Phe
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Asp Lys Ala Arg Glu Ala Cys Ala Asn Glu Ala Ala Thr Met Ala Thr
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Tyr Asn Gln Leu Ser Tyr Ala Gln Lys Ala Lys Tyr His Leu Cys Ser
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Ala Gly Trp Leu Glu Thr Gly Arg Val Ala Tyr Pro Thr Ala Phe Ala
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            20                  25                  30

Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala Pro
        35                  40                  45

Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu Gly
    50                  55                  60

Gln Ala Phe Arg Val Arg Leu Leu Arg Glu Leu Ser Glu Arg Leu Glu
65                  70                  75                  80

Leu Val Phe Leu Val Asp Asp Ser Ser Ser Val Gly Glu Val Asn Phe
                85                  90                  95

Arg Ser Glu Leu Met Phe Val Arg Lys Leu Leu Ser Asp Phe Pro Val
            100                 105                 110

Val Pro Thr Ala Thr Arg Val Ala Ile Val Thr Phe Ser Ser Lys Asn
        115                 120                 125

Tyr Val Val Pro Arg Val Asp Tyr Ile Ser Thr Arg Arg Ala Arg Gln
    130                 135                 140

His Lys Cys Ala Leu Leu Leu Gln Glu Ile Pro Ala Ile Ser Tyr Arg
145                 150                 155                 160

Gly Gly Gly Thr Tyr Thr Lys Gly Ala Phe Gln Gln Ala Ala Gln Ile
                165                 170                 175

Leu Leu His Ala Arg Glu Asn Ser Thr Lys Val Val Phe Leu Ile Thr
            180                 185                 190

Asp Gly Tyr Ser Asn Gly Gly Asp Pro Arg Pro Ile Ala Ala Ser Leu
        195                 200                 205
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Arg Asp Ser Gly Val Glu Ile Phe Thr Phe Gly Ile Trp Gln Gly Asn
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Ile Arg Glu Leu Asn Asp Met Ala Ser Thr Pro Lys Glu Glu His Cys
225                 230                 235                 240

Tyr Leu Leu His Ser Phe Glu Glu Phe Glu Ala Leu Val Ala Leu Cys
                245                 250                 255

His Met Leu Phe Val Asp Leu Pro Ser Gly Ser Phe Ile Gln Asp Asp
            260                 265                 270

Met Val His Cys Ser Tyr Leu Cys Asp Glu Gly Lys Asp Cys Cys Asp
        275                 280                 285

Arg Met Gly Ser Cys Lys Cys Gly Lys His Thr Gly His Phe Glu Cys
    290                 295                 300

Ile Cys Glu Lys Gly Tyr Asn Gly Lys Gly Leu Gln Tyr Asp Cys Thr
305                 310                 315                 320

Val Cys Pro Ser Gly Thr Tyr Lys Pro Glu Gly Ser Pro Gly Gly Ile
                325                 330                 335

Ser Ser Cys Ile Pro Cys Pro Asp Glu Asn His Thr Ser Pro Pro Gly
            340                 345                 350

Ser Thr Ser Pro Glu Asp Cys Val Cys Arg Glu Gly Tyr Arg Ala Ser
        355                 360                 365

Gly Gln Thr Cys Glu Val Val His Cys Pro Ala Leu Lys Pro Pro Glu
    370                 375                 380

Asn Gly Tyr Phe Ile Gln Asn Thr Cys Asn Asn His Phe Asn Ala Ala
385                 390                 395                 400

Cys Gly Val Arg Cys His Pro Gly Phe Asp Leu Val Gly Ser Ser Ile
                405                 410                 415

Ile Leu Cys Leu Pro Asn Gly Leu Trp Ser Gly Ser Glu Ser Tyr Cys
            420                 425                 430

Arg Val Arg Thr Cys Pro His Leu Arg Gln Pro Lys His Gly His Ile
        435                 440                 445

Ser Cys Ser Thr Arg Glu Met Leu Tyr Lys Thr Thr Cys Leu Val Ala
    450                 455                 460

Cys Asp Glu Gly Tyr Arg Leu Glu Gly Ser Asp Lys Leu Thr Cys Gln
465                 470                 475                 480

Gly Asn Ser Gln Trp Asp Gly Pro Glu Pro Arg Cys Val Glu Arg His
                485                 490                 495

Cys Ser Thr Phe Gln Met Pro Lys Asp Val Ile Ile Ser Pro His Asn
            500                 505                 510

Cys Gly Lys Gln Pro Ala Lys Phe Gly Thr Ile Cys Tyr Val Ser Cys
        515                 520                 525

Arg Gln Gly Phe Ile Leu Ser Gly Val Lys Glu Met Leu Arg Cys Thr
    530                 535                 540
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Thr Ser Gly Lys Trp Asn Val Gly Val Gln Ala Ala Val Cys Lys Asp
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Val Glu Ala Pro Gln Ile Asn Cys Pro Lys Asp Ile Glu Ala Lys Thr
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Leu Glu Gln Gln Asp Ser Ala Asn Val Thr Trp Gln Ile Pro Thr Ala
            580                 585                 590

Lys Asp Asn Ser Gly Glu Lys Val Ser Val His Val His Pro Ala Phe
        595                 600                 605

Thr Pro Pro Tyr Leu Phe Pro Ile Gly Asp Val Ala Ile Val Tyr Thr
    610                 615                 620

Ala Thr Asp Leu Ser Gly Asn Gln Ala Ser Cys Ile Phe His Ile Lys
625                 630                 635                 640

Val Ile Asp Ala Glu Pro Pro Val Ile Asp Trp Cys Arg Ser Pro Pro
                645                 650                 655

Pro Val Gln Val Ser Glu Lys Val His Ala Ala Ser Trp Asp Glu Pro
            660                 665                 670

Gln Phe Ser Asp Asn Ser Gly Ala Glu Leu Val Ile Thr Arg Ser His
        675                 680                 685

Thr Gln Gly Asp Leu Phe Pro Gln Gly Glu Thr Ile Val Gln Tyr Thr
    690                 695                 700

Ala Thr Asp Pro Ser Gly Asn Asn Arg Thr Cys Asp Ile His Ile Val
705                 710                 715                 720

Ile Lys Gly Ser Pro Cys Glu Ile Pro Phe Thr Pro Val Asn Gly Asp
                725                 730                 735

Phe Ile Cys Thr Pro Asp Asn Thr Gly Val Asn Cys Thr Leu Thr Cys
            740                 745                 750

Leu Glu Gly Tyr Asp Phe Thr Glu Gly Ser Thr Asp Lys Tyr Tyr Cys
        755                 760                 765

Ala Tyr Glu Asp Gly Val Trp Lys Pro Thr Tyr Thr Thr Glu Trp Pro
    770                 775                 780

Asp Cys Ala Ser Lys Arg Phe Ala Asn His Gly Phe Lys Ser Phe Glu
785                 790                 795                 800

Met Phe Tyr Lys Ala Ala Arg Cys Asp Asp Thr Asp Leu Met Lys Lys
                805                 810                 815

Phe Ser Glu Ala Phe Glu Thr Thr Leu Gly Lys Met Val Pro Ser Phe
            820                 825                 830

Cys Ser Asp Ala Glu Asp Ile Asp Cys Arg Leu Glu Glu Asn Leu Thr
        835                 840                 845

Lys Lys Tyr Cys Leu Glu Tyr Asn Tyr Asp Tyr Glu Asn Gly Phe Ala
    850                 855                 860

Ile Gly Pro Gly Gly Trp Gly Ala Ala Asn Arg Leu Asp Tyr Ser Tyr
865                 870                 875                 880
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Asp Asp Phe Leu Asp Thr Val Gln Glu Thr Ala Thr Ser Ile Gly Asn
                885                 890                 895

Ala Lys Ser Ser Arg Ile Lys Arg Ser Ala Pro Leu Ser Asp Tyr Lys
            900                 905                 910

Ile Lys Leu Ile Phe Asn Ile Thr Ala Ser Val Pro Leu Pro Asp Glu
        915                 920                 925

Arg Asn Asp Thr Leu Glu Trp Glu Asn Gln Gln Arg Leu Leu Gln Thr
    930                 935                 940

Leu Glu Thr Ile Thr Asn Lys Leu Lys Arg Thr Leu Asn Lys Asp Pro
945                 950                 955                 960

Met Tyr Ser Phe Gln Leu Ala Ser Glu Ile Leu Ile Ala Asp Ser Asn
                965                 970                 975

Ser Leu Glu Thr Lys Lys Ala Ser Pro Phe Cys Arg Pro Gly Ser Val
            980                 985                 990

Leu Arg Gly Arg Met Cys Val Asn Cys Pro Leu Gly Thr Tyr Tyr Asn
        995                1000                1005

Leu Glu His Phe Thr Cys Glu Ser Cys Arg Ile Gly Ser Tyr Gln Asp
   1010                1015                1020

Glu Glu Gly Gln Leu Glu Cys Lys Leu Cys Pro Ser Gly Met Tyr Thr
1025                1030                1035                1040

Glu Tyr Ile His Ser Arg Asn Ile Ser Asp Cys Lys Ala Gln Cys Lys
                1045                1050                1055

Gln Gly Thr Tyr Ser Tyr Ser Gly Leu Glu Thr Cys Glu Ser Cys Pro
            1060                1065                1070

Leu Gly Thr Tyr Gln Pro Lys Phe Gly Ser Arg Ser Cys Leu Ser Cys
        1075                1080                1085

Pro Glu Asn Thr Ser Thr Val Lys Arg Gly Ala Val Asn Ile Ser Ala
   1090                1095                1100

Cys Gly Val Pro Cys Pro Glu Gly Lys Phe Ser Arg Ser Gly Leu Met
1105                1110                1115                1120

Pro Cys His Pro Cys Pro Arg Asp Tyr Tyr Gln Pro Asn Ala Gly Lys
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Ala Phe Cys Leu Ala Cys Pro Phe Tyr Gly Thr Thr Pro Phe Ala Gly
            1140                1145                1150

Ser Arg Ser Ile Thr Glu Cys Ser Ser Phe Ser Ser Thr Phe Ser Ala
        1155                1160                1165

Ala Glu Glu Ser Val Val Pro Pro Ala Ser Leu Gly His Ile Lys Lys
   1170                1175                1180

Arg His Glu Ile Ser Ser Gln Ala Ser His Glu Cys Phe Phe Asn Pro
1185                1190                1195                1200

Cys His Asn Ser Gly Thr Cys Gln Gln Leu Gly Arg Gly Tyr Val Cys
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Leu Cys Pro Leu Gly Tyr Thr Gly Leu Lys Cys Glu Thr Asp Ile Asp
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Glu Cys Ser Pro Leu Pro Cys Leu Asn Asn Gly Val Cys Lys Asp Leu
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Val Gly Glu Phe Ile Cys Glu Cys Pro Ser Gly Tyr Thr Gly Lys His
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Cys Glu Leu Asn Ile Asn Glu Cys Gln Ser Asn Pro Cys Arg Asn Gln
1265                1270                1275                1280

Ala Thr Cys Val Asp Glu Leu Asn Ser Tyr Ser Cys Lys Cys Gln Pro
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Gly Phe Ser Gly Lys Arg Cys Glu Thr Gly Met Tyr Gln Leu Ser Val
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Ile Asn Asn Leu Asn Asn Ala Val Cys Glu Asp Gln Val Gly Gly Phe
       1315                1320                1325

Leu Cys Lys Cys Pro Pro Gly Phe Leu Gly Thr Arg Cys Gly Lys Asn
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Val Asp Glu Cys Leu Ser Gln Pro Cys Lys Asn Gly Ala Thr Cys Lys
1345                1350                1355                1360

Asp Gly Ala Asn Ser Phe Arg Cys Leu Cys Ala Ala Gly Phe Thr Gly
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Ser His Cys Glu Leu Asn Ile Asn Glu Cys Gln Ser Asn Pro Cys Arg
          1380                1385                1390

Asn Gln Ala Thr Cys Val Asp Glu Leu Asn Ser Tyr Ser Cys Lys Cys
       1395                1400                1405

Gln Pro Gly Phe Ser Gly Lys Arg Cys Glu Thr Glu Gln Ser Thr Gly
   1410                1415                1420

Phe Asn Leu Asp Phe Glu Val Ser Gly Ile Tyr Gly Tyr Val Met Leu
1425                1430                1435                1440

Asp Gly Met Leu Pro Ser Leu His Ala Leu Thr Cys Thr Phe Trp Met
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Lys Ser Ser Asp Asp Met Asn Tyr Gly Thr Pro Ile Ser Tyr Ala Val
          1460                1465                1470

Asp Asn Gly Ser Asp Asn Thr Leu Leu Leu Thr Asp Tyr Asn Gly Trp
       1475                1480                1485

Val Leu Tyr Val Asn Gly Arg Glu Lys Ile Thr Asn Cys Pro Ser Val
   1490                1495                1500

Asn Asp Gly Arg Trp His His Ile Ala Ile Thr Trp Thr Ser Thr Gly
1505                1510                1515                1520

Gly Ala Trp Arg Val Tyr Ile Asn Gly Glu Leu Ser Asp Gly Gly Thr
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Gly Leu Ser Ile Gly Lys Ala Ile Pro Gly Gly Gly Ala Leu Val Leu
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Gly Gln Glu Gln Asp Lys Lys Gly Glu Gly Phe Asn Pro Ala Glu Ser
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Phe Val Gly Ser Ile Ser Gln Leu Asn Leu Trp Asp Tyr Val Leu Ser
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Pro Gln Gln Val Lys Ser Leu Ala Thr Ser Cys Pro Glu Glu Leu Ser
1585                1590                1595                1600

Lys Gly Asn Val Leu Ala Trp Pro Asp Phe Leu Ser Gly Ile Val Gly
               1605                1610                1615

Lys Val Lys Ile Asp Ser Lys Ser Ile Phe Cys Ser Asp Cys Pro Arg
           1620                1625                1630

Leu Gly Gly Ser Val Pro His Leu Arg Thr Ala Ser Glu Asp Leu Lys
      1635                1640                1645

Pro Gly Ser Lys Val Asn Leu Phe Cys Glu Pro Gly Phe Gln Leu Val
   1650                1655                1660

Gly Asn Pro Val Gln Tyr Cys Leu Asn Gln Gly Gln Trp Thr Gln Pro
1665                1670                1675                1680

Leu Pro His Cys Glu Arg Ile Arg Cys Gly Val Pro Pro Pro Leu Glu
               1685                1690                1695

Asn Gly Phe His Ser Ala Asp Asp Phe Tyr Ala Gly Ser Thr Val Thr
           1700                1705                1710

Tyr Gln Cys Asn Asn Gly Tyr Tyr Leu Leu Gly Asp Ser Arg Met Phe
      1715                1720                1725

Cys Thr Asp Asn Gly Ser Trp Asn Gly Val Ser Pro Ser Cys Leu Asp
   1730                1735                1740

Val Asp Glu Cys Ala Val Gly Ser Asp Cys Ser Glu His Ala Ser Cys
1745                1750                1755                1760

Leu Asn Val Asp Gly Ser Tyr Ile Cys Ser Cys Val Pro Pro Tyr Thr
               1765                1770                1775

Gly Asp Gly Lys Asn Cys Ala Glu Pro Ile Lys Cys Lys Ala Pro Gly
           1780                1785                1790

Asn Pro Glu Asn Gly His Ser Ser Gly Glu Ile Tyr Thr Val Gly Ala
      1795                1800                1805

Glu Val Thr Phe Ser Cys Gln Glu Gly Tyr Gln Leu Met Gly Val Thr
   1810                1815                1820

Lys Ile Thr Cys Leu Glu Ser Gly Glu Trp Asn His Leu Ile Pro Tyr
1825                1830                1835                1840

Cys Lys Ala Val Ser Cys Gly Lys Pro Ala Ile Pro Glu Asn Gly Cys
               1845                1850                1855

Ile Glu Glu Leu Ala Phe Thr Phe Gly Ser Lys Val Thr Tyr Arg Cys
           1860                1865                1870

Asn Lys Gly Tyr Thr Leu Ala Gly Asp Lys Glu Ser Ser Cys Leu Ala
      1875                1880                1885
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Asn Ser Ser Trp Ser His Ser Pro Pro Val Cys Glu Pro Val Lys Cys
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Ser Ser Pro Glu Asn Ile Asn Asn Gly Lys Tyr Ile Leu Ser Gly Leu
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Thr Tyr Leu Ser Thr Ala Ser Tyr Ser Cys Asp Thr Gly Tyr Ser Leu
                1925                1930                1935

Gln Gly Pro Ser Ile Ile Glu Cys Thr Ala Ser Gly Ile Trp Asp Arg
            1940                1945                1950

Ala Pro Pro Ala Cys His Leu Val Phe Cys Gly Glu Pro Pro Ala Ile
        1955                1960                1965

Lys Asp Ala Val Ile Thr Gly Asn Asn Phe Thr Phe Arg Asn Thr Val
    1970                1975                1980

Thr Tyr Thr Cys Lys Glu Gly Tyr Thr Leu Ala Gly Leu Asp Thr Ile
1985                1990                1995                2000

Glu Cys Leu Ala Asp Gly Lys Trp Ser Arg Ser Asp Gln Gln Cys Leu
                2005                2010                2015

Ala Val Ser Cys Asp Glu Pro Pro Ile Val Asp His Ala Ser Pro Glu
            2020                2025                2030

Thr Ala His Arg Leu Phe Gly Asp Ile Ala Phe Tyr Tyr Cys Ser Asp
        2035                2040                2045

Gly Tyr Ser Leu Ala Asp Asn Ser Gln Leu Leu Cys Asn Ala Gln Gly
    2050                2055                2060

Lys Trp Val Pro Pro Glu Gly Gln Asp Met Pro Arg Cys Ile Ala His
2065                2070                2075                2080

Phe Cys Glu Lys Pro Pro Ser Val Ser Tyr Ser Ile Leu Glu Ser Val
                2085                2090                2095

Ser Lys Ala Lys Phe Ala Ala Gly Ser Val Val Ser Phe Lys Cys Met
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Glu Gly Phe Val Leu Asn Thr Ser Ala Lys Ile Glu Cys Met Arg Gly
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Gly Gln Trp Asn Pro Ser Pro Met Ser Ile Gln Cys Ile Pro Val Arg
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Cys Gly Glu Pro Pro Ser Ile Met Asn Gly Tyr Ala Ser Gly Ser Asn
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Tyr Ser Phe Gly Ala Met Val Ala Tyr Ser Cys Asn Lys Gly Phe Tyr
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Ile Lys Gly Glu Lys Lys Ser Thr Cys Glu Ala Thr Gly Gln Trp Ser
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Ser Pro Ile Pro Thr Cys His Pro Val Ser Cys Gly Glu Pro Pro Lys
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Val Glu Asn Gly Phe Leu Glu His Thr Thr Gly Arg Ile Phe Glu Ser
    2210                2215                2220
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Glu Val Arg Tyr Gln Cys Asn Pro Gly Tyr Lys Ser Val Gly Ser Pro
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Val Phe Val Cys Gln Ala Asn Arg His Trp His Ser Glu Ser Pro Leu
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Met Cys Val Pro Leu Asp Cys Gly Lys Pro Pro Pro Ile Gln Asn Gly
            2260                2265                2270

Phe Met Lys Gly Glu Asn Phe Glu Val Gly Ser Lys Val Gln Phe Phe
        2275                2280                2285

Cys Asn Glu Gly Tyr Glu Leu Val Gly Asp Ser Ser Trp Thr Cys Gln
    2290                2295                2300

Lys Ser Gly Lys Trp Asn Lys Lys Ser Asn Pro Lys Cys Met Pro Ala
2305                2310                2315                2320

Lys Cys Pro Glu Pro Pro Leu Leu Glu Asn Gln Leu Val Leu Lys Glu
                2325                2330                2335

Leu Thr Thr Glu Val Gly Val Val Thr Phe Ser Cys Lys Glu Gly His
            2340                2345                2350

Val Leu Gln Gly Pro Ser Val Leu Lys Cys Leu Pro Ser Gln Gln Trp
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Lys Leu Lys Asp Asp Gln Gly Tyr Phe Glu Gln Glu Asp Asp Met Met
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Asn Gly Ser Ala Pro Ser Cys Ile Ser Ile Glu Cys Asp Leu Pro Thr
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Trp Ala Thr Phe Gln Gln Met Ser Pro Ser Arg Asn Phe Ser Phe Arg
            20                  25                  30

Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala Pro
        35                  40                  45

Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu Gly
    50                  55                  60

Gln Ala Phe Arg Val Arg Leu Leu Arg Glu Leu Ser Glu Arg Leu Glu
65                  70                  75                  80

Leu Val Phe Leu Val Asp Asp Ser Ser Ser Val Gly Glu Val Asn Phe
                85                  90                  95

Arg Ser Glu Leu Met Phe Val Arg Lys Leu Leu Ser Asp Phe Pro Val
            100                 105                 110

Val Pro Thr Ala Thr Arg Val Ala Ile Val Thr Phe Ser Ser Lys Asn
        115                 120                 125

Tyr Val Val Pro Arg Val Asp Tyr Ile Ser Thr Arg Arg Ala Arg Gln
    130                 135                 140

His Lys Cys Ala Leu Leu Leu Gln Glu Ile Pro Ala Ile Ser Tyr Arg
145                 150                 155                 160

Gly Gly Gly Thr Tyr Thr Lys Gly Ala Phe Gln Gln Ala Ala Gln Ile
                165                 170                 175

Leu Leu His Ala Arg Glu Asn Ser Thr Lys Val Val Phe Leu Ile Thr
            180                 185                 190

Asp Gly Tyr Ser Asn Gly Gly Asp Pro Arg Pro Ile Ala Ala Ser Leu
        195                 200                 205

Arg Asp Ser Gly Val Glu Ile Phe Thr Phe Gly Ile Trp Gln Gly Asn
    210                 215                 220

Ile Arg Glu Leu Asn Asp Met Ala Ser Thr Pro Lys Glu Glu His Cys
225                 230                 235                 240

Tyr Leu Leu His Ser Phe Glu Glu Phe Glu Ala Leu Ala Arg Arg Ala
                245                 250                 255
```

```
Leu His Glu Asp Leu Pro Ser Gly Ser Phe Ile Gln Asp Asp Met Val
            260                 265                 270

His Cys Ser Tyr Leu Cys Asp Glu Gly Lys Asp Cys Cys Asp Arg Met
        275                 280                 285

Gly Ser Cys Lys Cys Gly Thr His Thr Gly His Phe Glu Cys Ile Cys
    290                 295                 300

Glu Lys Gly Tyr Tyr Gly Lys Gly Leu Gln Tyr Glu Cys Thr Ala Cys
305                 310                 315                 320

Pro Ser Gly Thr Tyr Lys Pro Glu Ala Ser Pro Gly Gly Ile Ser Ser
                325                 330                 335

Cys Ile Pro Cys Pro Asp Glu Asn His Thr Ser Pro Pro Gly Ser Thr
            340                 345                 350

Ser Pro Glu Asp Cys Val Cys Arg Glu Gly Tyr Arg Ala Ser Gly Gln
        355                 360                 365

Thr Cys Glu Leu Val His Cys Pro Ala Leu Lys Pro Pro Glu Asn Gly
    370                 375                 380

Tyr Phe Ile Gln Asn Thr Cys Asn Asn His Phe Asn Ala Ala Cys Gly
385                 390                 395                 400

Val Arg Cys His Pro Gly Phe Asp Leu Val Gly Ser Ser Ile Ile Leu
                405                 410                 415

Cys Leu Pro Asn Gly Leu Trp Ser Gly Ser Glu Ser Tyr Cys Arg Val
            420                 425                 430

Arg Thr Cys Pro His Leu Arg Gln Pro Lys His Gly His Ile Ser Cys
        435                 440                 445

Ser Thr Arg Glu Met Leu Tyr Lys Thr Thr Cys Leu Val Ala Cys Asp
    450                 455                 460

Glu Gly Tyr Arg Leu Glu Gly Ser Asp Lys Leu Thr Cys Gln Gly Asn
465                 470                 475                 480

Ser Gln Trp Asp Gly Pro Glu Pro Arg Cys Val Glu Arg His Cys Ser
                485                 490                 495

Thr Phe Gln Met Pro Lys Asp Val Ile Ile Ser Pro His Asn Cys Gly
            500                 505                 510

Lys Gln Pro Ala Lys Phe Gly Thr Ile Cys Tyr Val Ser Cys Arg Gln
        515                 520                 525

Gly Phe Ile Leu Ser Gly Val Lys Glu Met Leu Arg Cys Thr Thr Ser
    530                 535                 540

Gly Lys Trp Asn Val Gly Val Gln Ala Ala Val Cys Lys Asp Val Glu
545                 550                 555                 560

Ala Pro Gln Ile Asn Cys Pro Lys Asp Ile Glu Ala Lys Thr Leu Glu
                565                 570                 575

Gln Gln Asp Ser Ala Asn Val Thr Trp Gln Ile Pro Thr Ala Lys Asp
            580                 585                 590
```

```
Asn Ser Gly Glu Lys Val Ser Val Arg Val His Pro Ala Phe Thr Pro
        595                 600                 605

Pro Tyr Leu Phe Pro Ile Gly Asp Val Ala Ile Val Tyr Thr Ala Thr
    610                 615                 620

Asp Leu Ser Gly Asn Gln Ala Ser Cys Ile Phe His Ile Lys Val Ile
625                 630                 635                 640

Asp Ala Glu Pro Pro Val Ile Asp Trp Cys Arg Ser Pro Pro Pro Val
                645                 650                 655

Gln Val Ser Glu Lys Val His Ala Ala Ser Trp Asp Glu Pro Gln Phe
            660                 665                 670

Ser Asp Asn Ser Gly Ala Glu Leu Val Ile Thr Arg Ser His Thr Gln
        675                 680                 685

Gly Asp Leu Phe Pro Gln Gly Glu Thr Ile Val Gln Tyr Thr Ala Thr
    690                 695                 700

Asp Pro Ser Gly Asn Asn Arg Ile Cys Asp Ile His Ile Val Met Lys
705                 710                 715                 720

Gly Ser Pro Cys Glu Ile Pro Phe Thr Pro Val Asn Gly Asp Phe Ile
                725                 730                 735

Cys Thr Pro Asp Asn Thr Gly Val Asn Cys Thr Leu Thr Cys Leu Glu
            740                 745                 750

Gly Tyr Asp Phe Thr Glu Gly Ser Thr Asp Lys Tyr Tyr Cys Ala Tyr
        755                 760                 765

Glu Asp Gly Val Trp Lys Pro Thr Tyr Thr Thr Glu Trp Pro Asp Cys
    770                 775                 780

Ala Lys Lys Arg Phe Ala Asn His Gly Phe Lys Ser Phe Glu Met Phe
785                 790                 795                 800

Tyr Lys Ala Ala Arg Cys Asp Asp Ser Asp Leu Met Lys Lys Phe Ser
                805                 810                 815

Glu Ala Phe Glu Thr Thr Leu Gly Lys Met Val Pro Ser Phe Cys Ser
            820                 825                 830

Asp Ala Glu Asp Ile Asp Cys Arg Leu Glu Glu Asn Leu Thr Lys Lys
        835                 840                 845

Tyr Cys Leu Glu Tyr Asn Tyr Asp Tyr Glu Asn Gly Phe Ala Ile Gly
    850                 855                 860

Pro Gly Gly Trp Gly Ala Ala Asn Arg Leu Asp Tyr Ser Tyr Asp Asp
865                 870                 875                 880

Phe Leu Asp Thr Val Gln Glu Thr Ala Thr Ser Ile Gly Asn Ala Lys
                885                 890                 895

Ser Ser Arg Ile Lys Arg Ser Ala Pro Leu Ser Asp Tyr Lys Ile Lys
            900                 905                 910

Leu Ile Phe Asn Ile Thr Ala Ser Val Pro Leu Pro Asp Glu Arg Asn
        915                 920                 925
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Asp Thr Leu Glu Trp Glu Asn Gln Gln Arg Leu Leu Gln Thr Leu Glu
    930                 935                 940

Thr Ile Thr Asn Lys Leu Lys Arg Thr Leu Asn Lys Asp Pro Met Tyr
945                 950                 955                 960

Ser Phe Gln Leu Ala Ser Glu Ile Leu Ile Ala Asp Ser Asn Ser Leu
                965                 970                 975

Glu Thr Lys Lys Ala Ser Pro Phe Cys Arg Pro Gly Ser Val Leu Arg
            980                 985                 990

Gly Arg Met Cys Val Asn Cys Pro Leu Gly Thr Tyr Tyr Asn Leu Glu
        995                1000                1005

His Phe Thr Cys Glu Ser Cys Arg Ile Gly Ser Tyr Gln Asp Glu Glu
   1010                1015                1020

Gly Gln Leu Glu Cys Lys Leu Cys Pro Ser Gly Met Tyr Thr Glu Tyr
1025                1030                1035                1040

Ile His Ser Arg Asn Ile Ser Asp Cys Lys Ala Gln Cys Lys Gln Gly
               1045                1050                1055

Thr Tyr Ser Tyr Ser Gly Leu Glu Thr Cys Glu Ser Cys Pro Leu Gly
           1060                1065                1070

Thr Tyr Gln Pro Lys Phe Gly Ser Arg Ser Cys Leu Ser Cys Pro Glu
       1075                1080                1085

Asn Thr Ser Thr Val Lys Arg Gly Ala Val Asn Ile Ser Ala Cys Gly
   1090                1095                1100

Val Pro Cys Pro Glu Gly Lys Phe Ser Arg Ser Gly Leu Met Pro Cys
1105                1110                1115                1120

His Pro Cys Pro Arg Asp Tyr Tyr Gln Pro Asn Ala Gly Lys Ala Phe
               1125                1130                1135

Cys Leu Ala Cys Pro Phe Tyr Gly Thr Thr Pro Phe Ala Gly Ser Arg
           1140                1145                1150

Ser Ile Thr Glu Cys Ser Ser Phe Ser Ser Thr Phe Ser Ala Ala Glu
       1155                1160                1165

Glu Ser Val Val Pro Pro Ala Ser Leu Gly His Ile Lys Lys Arg His
   1170                1175                1180

Glu Ile Ser Ser Gln Ala Ser His Glu Cys Phe Phe Asn Pro Cys His
1185                1190                1195                1200

Asn Ser Gly Thr Cys Gln Gln Leu Gly Arg Gly Tyr Val Cys Leu Cys
               1205                1210                1215

Pro Leu Gly Tyr Thr Gly Leu Lys Cys Glu Thr Asp Ile Asp Glu Cys
           1220                1225                1230

Ser Pro Leu Pro Cys Leu Asn Asn Gly Val Cys Lys Asp Leu Val Gly
       1235                1240                1245

Glu Phe Ile Cys Glu Cys Pro Ser Gly Tyr Thr Gly Lys His Cys Glu
   1250                1255                1260
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Leu Asn Ile Asn Glu Cys Gln Ser Asn Pro Cys Arg Asn Gln Ala Thr
1265                1270                1275                1280

Cys Val Asp Glu Leu Asn Ser Tyr Ser Cys Lys Cys Gln Pro Gly Phe
                1285                1290                1295

Ser Gly Lys Arg Cys Glu Thr Gly Met Tyr Gln Leu Ser Val Ile Asn
            1300                1305                1310

Asn Leu Asn Asn Ala Val Cys Glu Asp Gln Val Gly Gly Phe Leu Cys
        1315                1320                1325

Lys Cys Pro Pro Gly Phe Leu Gly Thr Arg Cys Gly Lys Asn Val Asp
    1330                1335                1340

Glu Cys Leu Ser Gln Pro Cys Lys Asn Gly Ala Thr Cys Lys Asp Gly
1345                1350                1355                1360

Ala Asn Ser Phe Arg Cys Leu Cys Ala Ala Gly Phe Thr Gly Ser His
                1365                1370                1375

Cys Glu Leu Asn Ile Asn Glu Cys Gln Ser Asn Pro Cys Arg Asn Gln
            1380                1385                1390

Ala Thr Cys Val Asp Glu Leu Asn Ser Tyr Ser Cys Lys Cys Gln Pro
        1395                1400                1405

Gly Phe Ser Gly Lys Arg Cys Glu Thr Glu Gln Ser Thr Gly Phe Asn
    1410                1415                1420

Leu Asp Phe Glu Val Ser Gly Ile Tyr Gly Tyr Val Met Leu Asp Gly
1425                1430                1435                1440

Met Leu Pro Ser Leu His Ala Leu Thr Cys Thr Phe Trp Met Lys Ser
                1445                1450                1455

Ser Asp Asp Met Asn Tyr Gly Thr Pro Ile Ser Tyr Ala Val Asp Asn
            1460                1465                1470

Gly Ser Asp Asn Thr Leu Leu Leu Thr Asp Tyr Asn Gly Trp Val Leu
        1475                1480                1485

Tyr Val Asn Gly Arg Glu Lys Ile Thr Asn Cys Pro Ser Val Asn Asp
    1490                1495                1500

Gly Arg Trp His His Ile Ala Ile Thr Trp Thr Ser Thr Gly Gly Ala
1505                1510                1515                1520

Trp Arg Val Tyr Ile Asn Gly Glu Leu Ser Asp Gly Gly Thr Gly Leu
                1525                1530                1535

Ser Ile Gly Lys Ala Ile Pro Gly Gly Gly Ala Leu Val Leu Gly Gln
            1540                1545                1550

Glu Gln Asp Lys Lys Gly Glu Gly Phe Asn Pro Ala Glu Ser Phe Val
        1555                1560                1565

Gly Ser Ile Ser Gln Leu Asn Leu Trp Asp Tyr Val Leu Ser Pro Gln
    1570                1575                1580

Gln Val Lys Ser Leu Ala Thr Ser Cys Pro Glu Glu Leu Ser Lys Gly
1585                1590                1595                1600
```

```
Asn Val Leu Ala Trp Pro Asp Phe Leu Ser Gly Ile Val Gly Lys Val
                1605                1610                1615

Lys Ile Asp Ser Lys Ser Ile Phe Cys Ser Asp Cys Pro Arg Leu Gly
            1620                1625                1630

Gly Ser Val Pro His Leu Arg Thr Ala Ser Glu Asp Leu Lys Pro Gly
        1635                1640                1645

Ser Lys Val Asn Leu Phe Cys Glu Pro Gly Phe Gln Leu Val Gly Asn
    1650                1655                1660

Pro Val Gln Tyr Cys Leu Asn Gln Gly Gln Trp Thr Gln Pro Leu Pro
1665                1670                1675                1680

His Cys Glu Arg Ile Arg Cys Gly Val Pro Pro Pro Leu Glu Asn Gly
                1685                1690                1695

Phe His Ser Ala Asp Asp Phe Tyr Ala Gly Ser Thr Val Thr Tyr Gln
            1700                1705                1710

Cys Asn Asn Gly Tyr Tyr Leu Leu Gly Asp Ser Arg Met Phe Cys Thr
        1715                1720                1725

Asp Asn Gly Ser Trp Asn Gly Val Ser Pro Ser Cys Leu Asp Val Asp
    1730                1735                1740

Glu Cys Ala Val Gly Ser Asp Cys Ser Glu His Ala Ser Cys Leu Asn
1745                1750                1755                1760

Val Asp Gly Ser Tyr Ile Cys Ser Cys Val Pro Pro Tyr Thr Gly Asp
                1765                1770                1775

Gly Lys Asn Cys Ala Glu Pro Ile Lys Cys Lys Ala Pro Gly Asn Pro
            1780                1785                1790

Glu Asn Gly His Ser Ser Gly Glu Ile Tyr Thr Val Gly Ala Glu Val
        1795                1800                1805

Thr Phe Ser Cys Gln Glu Gly Tyr Gln Leu Met Gly Val Thr Lys Ile
    1810                1815                1820

Thr Cys Leu Glu Ser Gly Glu Trp Asn His Leu Ile Pro Tyr Cys Lys
1825                1830                1835                1840

Ala Val Ser Cys Gly Lys Pro Ala Ile Pro Glu Asn Gly Cys Ile Glu
                1845                1850                1855

Glu Leu Ala Phe Thr Phe Gly Ser Lys Val Thr Tyr Arg Cys Asn Lys
            1860                1865                1870

Gly Tyr Thr Leu Ala Gly Asp Lys Glu Ser Ser Cys Leu Ala Asn Ser
        1875                1880                1885

Ser Trp Ser His Ser Pro Pro Val Cys Glu Pro Val Lys Cys Ser Ser
    1890                1895                1900

Pro Glu Asn Ile Asn Asn Gly Lys Tyr Ile Leu Ser Gly Leu Thr Tyr
1905                1910                1915                1920

Leu Ser Thr Ala Ser Tyr Ser Cys Asp Thr Gly Tyr Ser Leu Gln Gly
                1925                1930                1935
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Pro Ser Ile Ile Glu Cys Thr Ala Ser Gly Ile Trp Asp Arg Ala Pro
          1940                1945                1950

Pro Ala Cys His Leu Val Phe Cys Gly Glu Pro Pro Ala Ile Lys Asp
       1955                1960                1965

Ala Val Ile Thr Gly Asn Asn Phe Thr Phe Arg Asn Thr Val Thr Tyr
   1970                1975                1980

Thr Cys Lys Glu Gly Tyr Thr Leu Ala Gly Leu Asp Thr Ile Glu Cys
1985                1990                1995                2000

Leu Ala Asp Gly Lys Trp Ser Arg Ser Asp Gln Gln Cys Leu Ala Val
               2005                2010                2015

Ser Cys Asp Glu Pro Pro Ile Val Asp His Ala Ser Pro Glu Thr Ala
          2020                2025                2030

His Arg Leu Phe Gly Asp Ile Ala Phe Tyr Tyr Cys Ser Asp Gly Tyr
       2035                2040                2045

Ser Leu Ala Asp Asn Ser Gln Leu Leu Cys Asn Ala Gln Gly Lys Trp
   2050                2055                2060

Val Pro Pro Glu Gly Gln Asp Met Pro Arg Cys Ile Ala His Phe Cys
2065                2070                2075                2080

Glu Lys Pro Pro Ser Val Ser Tyr Ser Ile Leu Glu Ser Val Ser Lys
               2085                2090                2095

Ala Lys Phe Ala Ala Gly Ser Val Val Ser Phe Lys Cys Met Glu Gly
          2100                2105                2110

Phe Val Leu Asn Thr Ser Ala Lys Ile Glu Cys Met Arg Gly Gly Gln
       2115                2120                2125

Trp Asn Pro Ser Pro Met Ser Ile Gln Cys Ile Pro Val Arg Cys Gly
   2130                2135                2140

Glu Pro Pro Ser Ile Met Asn Gly Tyr Ala Ser Gly Ser Asn Tyr Ser
2145                2150                2155                2160

Phe Gly Ala Met Val Ala Tyr Ser Cys Asn Lys Gly Phe Tyr Ile Lys
               2165                2170                2175

Gly Glu Lys Lys Ser Thr Cys Glu Ala Thr Gly Gln Trp Ser Ser Pro
          2180                2185                2190

Ile Pro Thr Cys His Pro Val Ser Cys Gly Glu Pro Pro Lys Val Glu
       2195                2200                2205

Asn Gly Phe Leu Glu His Thr Thr Gly Arg Ile Phe Glu Ser Glu Val
   2210                2215                2220

Arg Tyr Gln Cys Asn Pro Gly Tyr Lys Ser Val Gly Ser Pro Val Phe
2225                2230                2235                2240

Val Cys Gln Ala Asn Arg His Trp His Ser Glu Ser Pro Leu Met Cys
               2245                2250                2255

Val Pro Leu Asp Cys Gly Lys Pro Pro Pro Ile Gln Asn Gly Phe Met
          2260                2265                2270
```

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Lys Gly Glu Asn Phe Glu Val Gly Ser Lys Val Gln Phe Phe Cys Asn
       2275                2280                2285

Glu Gly Tyr Glu Leu Val Gly Asp Ser Ser Trp Thr Cys Gln Lys Ser
   2290                2295                2300

Gly Lys Trp Asn Lys Lys Ser Asn Pro Lys Cys Met Pro Ala Lys Cys
2305                2310                2315                2320

Pro Glu Pro Pro Leu Leu Glu Asn Gln Leu Val Leu Lys Glu Leu Thr
                2325                2330                2335

Thr Glu Val Gly Val Val Thr Phe Ser Cys Lys Glu Gly His Val Leu
           2340                2345                2350

Gln Gly Pro Ser Val Leu Lys Cys Leu Pro Ser Gln Gln Trp Asn Asp
       2355                2360                2365

Ser Phe Pro Val Cys Lys Ile Val Leu Cys Thr Pro Pro Pro Leu Ile
   2370                2375                2380

Ser Phe Gly Val Pro Ile Pro Ser Ser Ala Leu His Phe Gly Ser Thr
2385                2390                2395                2400

Val Lys Tyr Ser Cys Val Gly Gly Phe Phe Leu Arg Gly Asn Ser Thr
                2405                2410                2415

Thr Leu Cys Gln Pro Asp Gly Thr Trp Ser Ser Pro Leu Pro Glu Cys
           2420                2425                2430

Val Pro Val Glu Cys Pro Gln Pro Glu Glu Ile Pro Asn Gly Ile Ile
       2435                2440                2445

Asp Val Gln Gly Leu Ala Tyr Leu Ser Thr Ala Leu Tyr Thr Cys Lys
   2450                2455                2460

Pro Gly Phe Glu Leu Val Gly Asn Thr Thr Thr Leu Cys Gly Glu Asn
2465                2470                2475                2480

Gly His Trp Leu Gly Gly Lys Pro Thr Cys Lys Ala Ile Glu Cys Leu
                2485                2490                2495

Lys Pro Lys Glu Ile Leu Asn Gly Lys Phe Ser Tyr Thr Asp Leu His
           2500                2505                2510

Tyr Gly Gln Thr Val Thr Tyr Ser Cys Asn Arg Gly Phe Arg Leu Glu
       2515                2520                2525

Gly Pro Ser Ala Leu Thr Cys Leu Glu Thr Gly Asp Trp Asp Val Asp
   2530                2535                2540

Ala Pro Ser Cys Asn Ala Ile His Cys Asp Ser Pro Gln Pro Ile Glu
2545                2550                2555                2560

Asn Gly Phe Val Glu Gly Ala Asp Tyr Ser Tyr Gly Ala Ile Ile Ile
                2565                2570                2575

Tyr Ser Cys Phe Pro Gly Phe Gln Val Ala Gly His Ala Met Gln Thr
           2580                2585                2590

Cys Glu Glu Ser Gly Trp Ser Ser Ser Ile Pro Thr Cys Met Pro Ile
       2595                2600                2605
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Asp Cys Gly Leu Pro Pro His Ile Asp Phe Gly Asp Cys Thr Lys Leu
   2610                2615                2620

Lys Asp Asp Gln Gly Tyr Phe Glu Gln Glu Asp Asp Met Met Glu Val
2625                2630                2635                2640

Pro Tyr Val Thr Pro His Pro Pro Tyr His Leu Gly Ala Val Ala Lys
               2645                2650                2655

Thr Trp Glu Asn Thr Lys Glu Ser Pro Ala Thr His Ser Ser Asn Phe
           2660                2665                2670

Leu Tyr Gly Thr Met Val Ser Tyr Thr Cys Asn Pro Gly Tyr Glu Leu
       2675                2680                2685

Leu Gly Asn Pro Val Leu Ile Cys Gln Glu Asp Gly Thr Trp Asn Gly
   2690                2695                2700

Ser Ala Pro Ser Cys Ile Ser Ile Glu Cys Asp Leu Pro Thr Ala Pro
2705                2710                2715                2720

Glu Asn Gly Phe Leu Arg Phe Thr Glu Thr Ser Met Gly Ser Ala Val
               2725                2730                2735

Gln Tyr Ser Cys Lys Pro Gly His Ile Leu Ala Gly Ser Asp Leu Arg
           2740                2745                2750

Leu Cys Leu Glu Asn Arg Lys Trp Ser Gly Ala Ser Pro Arg Cys Glu
       2755                2760                2765

Ala Ile Ser Cys Lys Lys Pro Asn Pro Val Met Asn Gly Ser Ile Lys
   2770                2775                2780

Gly Ser Asn Tyr Thr Tyr Leu Ser Thr Leu Tyr Tyr Glu Cys Asp Pro
2785                2790                2795                2800

Gly Tyr Val Leu Asn Gly Thr Glu Arg Arg Thr Cys Gln Asp Asp Lys
               2805                2810                2815

Asn Trp Asp Glu Asp Glu Pro Ile Cys Ile Pro Val Asp Cys Ser Ser
           2820                2825                2830

Pro Pro Val Ser Ala Asn Gly Gln Val Arg Gly Asp Glu Tyr Thr Phe
       2835                2840                2845

Gln Lys Glu Ile Glu Tyr Thr Cys Asn Glu Gly Phe Leu Leu Glu Gly
   2850                2855                2860

Ala Arg Ser Arg Val Cys Leu Ala Asn Gly Ser Trp Ser Gly Ala Thr
2865                2870                2875                2880

Pro Asp Cys Val Pro Val Arg Cys Ala Thr Pro Pro Gln Leu Ala Asn
               2885                2890                2895

Gly Val Thr Glu Gly Leu Asp Tyr Gly Phe Met Lys Glu Val Thr Phe
           2900                2905                2910

His Cys His Glu Gly Tyr Ile Leu His Gly Ala Pro Lys Leu Thr Cys
       2915                2920                2925

Gln Ser Asp Gly Asn Trp Asp Ala Glu Ile Pro Leu Cys Lys Pro Val
   2930                2935                2940
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```
Asn Cys Gly Pro Pro Glu Asp Leu Ala His Gly Phe Pro Asn Gly Phe
2945                2950                2955                2960

Ser Phe Ile His Gly Gly His Ile Gln Tyr Gln Cys Phe Pro Gly Tyr
                2965                2970                2975

Lys Leu His Gly Asn Ser Ser Arg Arg Cys Leu Ser Asn Gly Ser Trp
            2980                2985                2990

Ser Gly Ser Ser Pro Ser Cys Leu Pro Cys Arg Cys Ser Thr Pro Val
        2995                3000                3005

Ile Glu Tyr Gly Thr Val Asn Gly Thr Asp Phe Asp Cys Gly Lys Ala
    3010                3015                3020

Ala Arg Ile Gln Cys Phe Lys Gly Phe Lys Leu Leu Gly Leu Ser Glu
3025                3030                3035                3040

Ile Thr Cys Glu Ala Asp Gly Gln Trp Ser Ser Gly Phe Pro His Cys
                3045                3050                3055

Glu His Thr Ser Cys Gly Ser Leu Pro Met Ile Pro Asn Ala Phe Ile
            3060                3065                3070

Ser Glu Thr Ser Ser Trp Lys Glu Asn Val Ile Thr Tyr Ser Cys Arg
        3075                3080                3085

Ser Gly Tyr Val Ile Gln Gly Ser Ser Asp Leu Ile Cys Thr Glu Lys
    3090                3095                3100

Gly Val Trp Ser Gln Pro Tyr Pro Val Cys Glu Pro Leu Ser Cys Gly
3105                3110                3115                3120

Ser Pro Pro Ser Val Ala Asn Ala Val Ala Thr Gly Glu Ala His Thr
                3125                3130                3135

Tyr Glu Ser Glu Val Lys Leu Arg Cys Leu Glu Gly Tyr Thr Met Asp
            3140                3145                3150

Thr Asp Thr Asp Thr Phe Thr Cys Gln Lys Asp Gly Arg Trp Phe Pro
        3155                3160                3165

Glu Arg Ile Ser Cys Ser Pro Lys Lys Cys Pro Leu Pro Glu Asn Ile
    3170                3175                3180

Thr His Ile Leu Val His Gly Asp Asp Phe Ser Val Asn Arg Gln Val
3185                3190                3195                3200

Ser Val Ser Cys Ala Glu Gly Tyr Thr Phe Glu Gly Val Asn Ile Ser
                3205                3210                3215

Val Cys Gln Leu Asp Gly Thr Trp Glu Pro Pro Phe Ser Asp Glu Ser
            3220                3225                3230

Cys Ser Pro Val Ser Cys Gly Lys Pro Glu Ser Pro Glu His Gly Phe
        3235                3240                3245

Val Val Gly Ser Lys Tyr Thr Phe Glu Ser Thr Ile Ile Tyr Gln Cys
    3250                3255                3260

Glu Pro Gly Tyr Glu Leu Glu Gly Asn Arg Glu Arg Val Cys Gln Glu
3265                3270                3275                3280
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Asn Arg Gln Trp Ser Gly Gly Val Ala Ile Cys Lys Glu Thr Arg Cys
                3285                3290                3295

Glu Thr Pro Leu Glu Phe Leu Asn Gly Lys Ala Asp Ile Glu Asn Arg
            3300                3305                3310

Thr Thr Gly Pro Asn Val Val Tyr Ser Cys Asn Arg Gly Tyr Ser Leu
        3315                3320                3325

Glu Gly Pro Ser Glu Ala His Cys Thr Glu Asn Gly Thr Trp Ser His
    3330                3335                3340

Pro Val Pro Leu Cys Lys Pro Asn Pro Cys Pro Val Pro Phe Val Ile
3345                3350                3355                3360

Pro Glu Asn Ala Leu Leu Ser Glu Lys Glu Phe Tyr Val Asp Gln Asn
                3365                3370                3375

Val Ser Ile Lys Cys Arg Glu Gly Phe Leu Leu Gln Gly His Gly Ile
            3380                3385                3390

Ile Thr Cys Asn Pro Asp Glu Thr Trp Thr Gln Thr Ser Ala Lys Cys
        3395                3400                3405

Glu Lys Ile Ser Cys Gly Pro Pro Ala His Val Glu Asn Ala Ile Ala
    3410                3415                3420

Arg Gly Val His Tyr Gln Tyr Gly Asp Met Ile Thr Tyr Ser Cys Tyr
3425                3430                3435                3440

Ser Gly Tyr Met Leu Glu Gly Phe Leu Arg Ser Val Cys Leu Glu Asn
                3445                3450                3455

Gly Thr Trp Thr Ser Pro Pro Ile Cys Arg Ala Val Cys Arg Phe Pro
            3460                3465                3470

Cys Gln Asn Gly Gly Ile Cys Gln Arg Pro Asn Ala Cys Ser Cys Pro
        3475                3480                3485

Glu Gly Trp Met Gly Arg Leu Cys Glu Glu Pro Ile Cys Ile Leu Pro
    3490                3495                3500

Cys Leu Asn Gly Gly Arg Cys Val Ala Pro Tyr Gln Cys Asp Cys Pro
3505                3510                3515                3520

Pro Gly Trp Thr Gly Ser Arg Cys His Thr Ala Val Cys Gln Ser Pro
                3525                3530                3535

Cys Leu Asn Gly Gly Lys Cys Val Arg Pro Asn Arg Cys His Cys Leu
            3540                3545                3550

Ser Ser Trp Thr Gly His Asn Cys Ser Arg Lys Arg Arg Thr Gly Phe
        3555                3560                3565
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<210> 9
<211> 870
<212> DNA
<213> Homo sapiens

<400> 9
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gccgccctgg agaggcaggt gtttgacttc ctgggctacc agtgggcgcc catcctggcc 120
aactttgtcc acatcatcat cgtcatcctg ggactcttcg gcaccatcca gtaccggctg 180
cgctatgtca tggtgtacac gctgtgggca gccgtctggg tcacctggaa cgtcttcatc 240
atctgcttct acctggaagt cggtggcctc ttaaaggaca gcgagctact gaccttcagc 300
ctctcccggc atcgctcctg gtggcgtgag cgctggccag gctgtctgca tgaggaggtg 360
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ctggagccca gctatgtgga ggccctacac agttgcctgc agatcctgat cgcgcttctg 480
ggctttgtct gtggctgcca ggtggtcagc gtgtttacgg aggaagagga cagctttgat 540
ttcattggtg gatttgatcc atttcctctc taccatgtca atgaaaagcc atccagtctc 600
ttgtccaagc aggtgtactt gcctgcgtaa gtgaggaaac agctgatcct gctcctgtgg 660
cctccagcct tcagcgaccg accagtgaca atgacaggag ctcccaggcc ttgggacgcg 720
cccccaccca gcacccccca ggcggccggc agcacctgcc ctgggtttta agtactggac 780
accagccagg gcggcagggc agtgccacgg ctggctgcag cgtcaagaga gtttgtaatt 840
tcctttctct taaaaaaaaa aaaaaaaaaa 870

<210> 10
<211> 209
<212> PRT
<213> Homo sapiens

<400> 10
Met Gly Ser Cys Ser Gly Arg Cys Ala Leu Val Val Leu Cys Ala Phe
1 5 10 15

Gln Leu Val Val Ala Ala Leu Glu Arg Gln Val Phe Asp Phe Leu Gly
20 25 30

Tyr Gln Trp Ala Pro Ile Leu Ala Asn Phe Val His Ile Ile Ile Val
35 40 45

Ile Leu Gly Leu Phe Gly Thr Ile Gln Tyr Arg Leu Arg Tyr Val Met
50 55 60

Val Tyr Thr Leu Trp Ala Ala Val Trp Val Thr Trp Asn Val Phe Ile
65 70 75 80

Ile Cys Phe Tyr Leu Glu Val Gly Gly Leu Leu Lys Asp Ser Glu Leu
85 90 95

Leu Thr Phe Ser Leu Ser Arg His Arg Ser Trp Trp Arg Glu Arg Trp
100 105 110

Pro Gly Cys Leu His Glu Glu Val Pro Ala Val Gly Leu Gly Ala Pro
115 120 125

His Gly Gln Ala Leu Val Ser Gly Ala Gly Cys Ala Leu Glu Pro Ser
130 135 140

Tyr Val Glu Ala Leu His Ser Cys Leu Gln Ile Leu Ile Ala Leu Leu
145 150 155 160

Gly Phe Val Cys Gly Cys Gln Val Val Ser Val Phe Thr Glu Glu Glu
165 170 175

Asp Ser Phe Asp Phe Ile Gly Gly Phe Asp Pro Phe Pro Leu Tyr His
180 185 190

Val Asn Glu Lys Pro Ser Ser Leu Leu Ser Lys Gln Val Tyr Leu Pro
195 200 205

Ala

<210> 11
<211> 632
<212> DNA
<213> Homo sapiens

<400> 11
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cttcggcacc atccagtacc ggctgcgcta tgtcatggtg tacacgctgt gggcagccgt 180
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cctgcagatc ctgatcgcgc ttctgggctt tgtctgtggc tgccaggtgg tcagcgtgtt 480
tacggaggaa gaggacagct ttgatttcat tggtggattt gatccatttc ctctctacca 540
tgtcaatgaa aagccatcca gtctcttgtc caagcaggtg tacttgcctg cgtaagtgag 600
gaaacagctg atcctgctcc tgtggcctcc ac 632

<210> 12
<211> 197
<212> PRT
<213> Homo sapiens

<400> 12
Val Leu Cys Ala Phe Gln Leu Val Ala Ala Leu Glu Arg Gln Val Phe
1 5 10 15

Asp Phe Leu Gly Tyr Gln Trp Ala Pro Ile Leu Ala Asn Phe Val His
20 25 30

Ile Ile Ile Val Ile Leu Gly Leu Phe Gly Thr Ile Gln Tyr Arg Leu
35 40 45

Arg Tyr Val Met Val Tyr Thr Leu Trp Ala Ala Val Trp Val Thr Trp
50 55 60

Asn Val Phe Ile Ile Cys Phe Tyr Leu Glu Val Gly Gly Leu Leu Lys
65 70 75 80

Asp Ser Glu Leu Leu Thr Phe Ser Leu Ser Arg His Arg Ser Trp Trp
85 90 95

Arg Glu Arg Trp Pro Gly Cys Leu His Glu Glu Val Pro Ala Val Gly
100 105 110

Leu Gly Ala Pro His Gly Gln Ala Leu Val Ser Gly Ala Gly Cys Ala
115 120 125

Leu Glu Pro Ser Tyr Val Glu Ala Leu His Ser Cys Leu Gln Ile Leu
130 135 140

Ile Ala Leu Leu Gly Phe Val Cys Gly Cys Gln Val Val Ser Val Phe
145 150 155 160

Thr Glu Glu Glu Asp Ser Phe Asp Phe Ile Gly Gly Phe Asp Pro Phe
165 170 175

Pro Leu Tyr His Val Asn Glu Lys Pro Ser Ser Leu Leu Ser Lys Gln

180 185 190

Val Tyr Leu Pro Ala
195

<210> 13
<211> 909
<212> DNA
<213> Homo sapiens

<400> 13
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cgtccctctc tgcaggtcca ctaacccatc tgattaccgg atcctgcttg ggtatgacca 180
gcaaagccat cccacagagc acagcaagca gatgacagtg aataagatca tggtgcacgc 240
tgactataac gagttgcacc gcatggggag tgacatcacc ctgctgcagc tgcaccgtca 300
tgtggaattc agctcccaca tcctccccgc ctgccttccg gaaccaacca cgtggctggc 360
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tgagcccttc caacttcagg aggcagaggt cggtgtcatg gacaacactg tctgcggatc 480
ctttttccag ccccagtacc ccggccagcc aagcagcagt gactacacca tccacgagga 540
catgctgtgc gctggggacc tcataacagg aaaggccatt tgccgacgag actccagggg 600
tcccctcgtc tgcccattaa atggcacctg gttcctgatg gggctgtcta gttggagcct 660
cgactgctgc tcacccgtcg gtcccagggt cttcaccagg ctcccctact tcaccaactg 720
gatcagccag aagaagaggg agagcacccc tccagatccc gccttggctc ctcctcagga 780
aacaccccca gccctggaca gcatgacctc tcagggcatc gtccacaagc ccgggctctg 840
cgcagccctt ctggctgctc acatgttcct cctgctgctg attctcctgg ggagcctgtg 900
aagggccag 909

<210> 14
<211> 295
<212> PRT
<213> Homo sapiens

<400> 14
Met Arg Glu Ala Gly Ala Glu Arg Ser Gly Gln Pro Ala Gly Ala Leu
1 5 10 15

Arg Thr Gly Arg Leu Pro Pro Leu Ala Asn Pro Pro Ala Ala Ala Arg
20 25 30

Leu Val His Leu Val Pro Leu Cys Arg Ser Thr Asn Pro Ser Asp Tyr
35 40 45

Arg Ile Leu Leu Gly Tyr Asp Gln Gln Ser His Pro Thr Glu His Ser
50 55 60

Lys Gln Met Thr Val Asn Lys Ile Met Val His Ala Asp Tyr Asn Glu
65 70 75 80

Leu His Arg Met Gly Ser Asp Ile Thr Leu Leu Gln Leu His Arg His
85 90 95

Val Glu Phe Ser Ser His Ile Leu Pro Ala Cys Leu Pro Glu Pro Thr
100 105 110

Thr Trp Leu Ala Pro Asp Ser Ser Cys Trp Ile Ser Gly Trp Gly Met
115 120 125

Val Thr Glu Asp Val Phe Leu Pro Glu Pro Phe Gln Leu Gln Glu Ala
130 135 140

```
Glu Val Gly Val Met Asp Asn Thr Val Cys Gly Ser Phe Phe Gln Pro
145                 150                 155                 160

Gln Tyr Pro Gly Gln Pro Ser Ser Ser Asp Tyr Thr Ile His Glu Asp
                165                 170                 175

Met Leu Cys Ala Gly Asp Leu Ile Thr Gly Lys Ala Ile Cys Arg Arg
            180                 185                 190

Asp Ser Arg Gly Pro Leu Val Cys Pro Leu Asn Gly Thr Trp Phe Leu
        195                 200                 205

Met Gly Leu Ser Ser Trp Ser Leu Asp Cys Cys Ser Pro Val Gly Pro
    210                 215                 220

Arg Val Phe Thr Arg Leu Pro Tyr Phe Thr Asn Trp Ile Ser Gln Lys
225                 230                 235                 240

Lys Arg Glu Ser Thr Pro Pro Asp Pro Ala Leu Ala Pro Pro Gln Glu
                245                 250                 255

Thr Pro Pro Ala Leu Asp Ser Met Thr Ser Gln Gly Ile Val His Lys
            260                 265                 270

Pro Gly Leu Cys Ala Ala Leu Leu Ala Ala His Met Phe Leu Leu Leu
        275                 280                 285

Leu Ile Leu Leu Gly Ser Leu
    290                 295
```

<210> 15
<211> 1628
<212> DNA
<213> Homo sapiens

<400> 15

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atcccaggcc tggctcccag acagcgggcg atctgccaga gccggcccga cgccatcatc 180
gtcataggag aaggctcaca aatgggcctg gacgagtgtc agtttcagtt ccgcaatggc 240
cgctggaact gctctgcact gggagagcgc accgtcttcg ggaaggagct caaagtgggg 300
agccgggacg gtgcgttcac ctacgccatc attgccgccg gcgtggccca cgccatcaca 360
gctgcctgta cccatggcaa cctgagcgac tgtggctgcg acaaagagaa gcaaggccag 420
taccaccggg acgagggctg gaagtggggt ggctgctctg ccgacatccg ctacggcatc 480
ggcttcgcca aggtcttcgt ggacgctcgg gagatcatga agaacgcgcg gcgcctcatg 540
aacctgcata acaatgaggc cggcaggaag gttctagagg accggatgca gctggagtgc 600
aagtgccacg gcgtgtctgg ctcctgcacc accaaaacct gctggaccac gctgcccaag 660
ttccgagagg tgggccacct gctgaaggag aagtacaacg cggccgtgca ggtggaggtg 720
gtgcgggcca gccgtctgcg gcagcccacc ttcctgcgca tcaaacagct gcgcagctat 780
cgcaagccca tgaagacgga cctggtgtac atcgagaagt cgcccaacta ctgcgaggag 840
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gccagcggct gtgacctcat gtgctgtggg cgtggctaca acacccacca gtacgcccgc 960
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gaaaaaaaat ctctcagagc cctcaactat tctgttccac acccaatgct gctccaccct 1260
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tggacccctg ggcctcatca cagcaatatt taacaattta ttctgataaa aataatatta 1380
atttatttaa ttaaaaagaa ttcttccacc tcgtcgggat ccgttttctg caatcaaagt 1440
ggactgcttg ctttcctagc aggatgattt tgttgctagg acaaggagcc gtgtagaagt 1500
gtacataact attctttatg cagatatttc tactagctga ttttgcaggt acccaccttg 1560
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cagcactaga tgtttaagta caagaggaga catcttttat gcatatatag atatacacac 1620
acgaaaaa 1628

<210> 16
<211> 349
<212> PRT
<213> Homo sapiens

<400> 16

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Met Asn Arg Lys Ala Arg Arg Cys Leu Gly His Leu Phe Leu Ser Leu
  1               5                  10                  15

Gly Met Val Cys Leu Leu Ala Cys Gly Phe Ser Ser Val Val Ala Leu
             20                  25                  30

Gly Ala Thr Val Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
         35                  40                  45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
     50                  55                  60

Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe Arg Asn Gly
 65                  70                  75                  80

Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
                 85                  90                  95

Leu Lys Val Gly Ser Arg Asp Gly Ala Phe Thr Tyr Ala Ile Ile Ala
            100                 105                 110

Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr His Gly Asn Leu
        115                 120                 125

Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Arg Asp
    130                 135                 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
145                 150                 155                 160

Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Met Lys Asn Ala
                165                 170                 175

Arg Arg Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Val Leu
            180                 185                 190

Glu Asp Arg Met Gln Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
        195                 200                 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Lys Phe Arg Glu Val
    210                 215                 220

Gly His Leu Leu Lys Glu Lys Tyr Asn Ala Ala Val Gln Val Glu Val
225                 230                 235                 240

Val Arg Ala Ser Arg Leu Arg Gln Pro Thr Phe Leu Arg Ile Lys Gln
                245                 250                 255

Leu Arg Ser Tyr Arg Lys Pro Met Lys Thr Asp Leu Val Tyr Ile Glu
            260                 265                 270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
        275                 280                 285
```

```
Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala Ser Gly Cys
    290                 295                 300

Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ala Arg
305                 310                 315                 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
                325                 330                 335

Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
            340                 345
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<210> 17
<211> 966
<212> DNA
<213> Homo sapiens

<400> 17

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ctggacgagt gtcagtttca gttccgcaat ggccgctgga actgctctgc actgggagag 180
cgcaccgtct tcgggaagga gctcaaagtg gggagccggg aggctgcgtt cacctacgcc 240
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gactgtggct gcgacaaaga gaagcaaggc cagtaccacc gggacgaggg ctggaagtgg 360
ggtggctgct ctgccgacat ccgctacggc atcggcttcg ccaaggtctt tgtggatgcc 420
cgggagatca agcagaatgc ccggactctc atgaacttgc acaacaacga ggcaggccga 480
aagatcctgg aggagaacat gaagctggaa tgtaagtgcc acggcgtgtc aggctcgtgc 540
accaccaaga cgtgctggac cacactgcca cagtttcggg agctgggcta cgtgctcaag 600
gacaagtaca acgaggccgt tcacgtggag cctgtgcgtg ccagccgcaa caagcggccc 660
accttcctga agatcaagaa gccactgtcg taccgcaagc ccatggacac ggacctggtg 720
tacatcgaga agtcgcccaa ctactgcgag gaggacccgg tgaccggcag tgtgggcacc 780
cagggccgcg cctgcaacaa gacggctccc caggccagcg gctgtgacct catgtgctgt 840
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tggtgctgct atgtcaagtg caacacgtgc agcgagcgca cggagatgta cacgtgcaag 960
ctcgag                                                          966
```

<210> 18
<211> 322
<212> PRT
<213> Homo sapiens

<400> 18

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Arg Ser Leu Gly Ala Thr Val Ile Cys Asn Lys Ile Pro Gly Leu Ala
  1               5                  10                  15

Pro Arg Gln Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val
            20                  25                  30

Ile Gly Glu Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe
        35                  40                  45

Arg Asn Gly Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe
    50                  55                  60

Gly Lys Glu Leu Lys Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala
65                  70                  75                  80

Ile Ile Ala Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr Gln
                85                  90                  95
```

```
Gly Asn Leu Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr
            100                 105                 110

His Arg Asp Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg
        115                 120                 125

Tyr Gly Ile Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys
    130                 135                 140

Gln Asn Ala Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg
145                 150                 155                 160

Lys Ile Leu Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val
                165                 170                 175

Ser Gly Ser Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Gln Phe
            180                 185                 190

Arg Glu Leu Gly Tyr Val Leu Lys Asp Lys Tyr Asn Glu Ala Val His
        195                 200                 205

Val Glu Pro Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys
    210                 215                 220

Ile Lys Lys Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val
225                 230                 235                 240

Tyr Ile Glu Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly
                245                 250                 255

Ser Val Gly Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala
            260                 265                 270

Ser Gly Cys Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln
        275                 280                 285

Tyr Ala Arg Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr
    290                 295                 300

Val Lys Cys Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
305                 310                 315                 320

Leu Glu
```

<210> 19
<211> 3731
<212> DNA
<213> Homo sapiens

<400> 19

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actgcaggag ccctggccag gccgtgtgca acttcgtgtg tgactgcagg gactgctcag 180
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ccgacttggg ctggtacatg gccgttggaa cccaccgagg gaaagaggca tccaccgcag 420
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tgaccctgtg gcagagcaca gggccctggg gccctggctg gcaggagttg gcagtgacca 600
caggccgcat ccggggtgac ttccgagtga ccttctctgc cacccgaaat gccacccaca 660
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```
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tgtgcgacgg ggaagacaac tgcggggacc tgtctgatga gaacccactc acctgtggcc 840
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ccacagtgac caccgagaga gacagagagg tctcctgtaa ctttgagcgg gacacatgca 2040
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accacgacca caccacaggc caaggccact ttgtgctcct ggaccccaca gacccctgg 2160
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<210> 20
<211> 1220
<212> PRT
<213> Homo sapiens

<400> 20

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Met Pro Leu Ser Ser His Leu Leu Pro Ala Leu Val Leu Phe Leu Ala
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Ala Gly Ser Ser Gly Trp Ala Trp Val Pro Asn His Cys Arg Ser Pro
            20                  25                  30

Gly Gln Ala Val Cys Asn Phe Val Cys Asp Cys Arg Asp Cys Ser Asp
        35                  40                  45

Glu Ala Gln Cys Gly Tyr His Gly Ala Ser Pro Thr Leu Gly Ala Pro
    50                  55                  60

Phe Ala Cys Asp Phe Glu Gln Asp Pro Cys Gly Trp Arg Asp Ile Ser
65                  70                  75                  80

Thr Ser Gly Tyr Ser Trp Leu Arg Asp Arg Ala Gly Ala Ala Leu Glu
                85                  90                  95

Gly Pro Gly Pro His Ser Asp His Thr Leu Gly Thr Asp Leu Gly Trp
            100                 105                 110

Tyr Met Ala Val Gly Thr His Arg Gly Lys Glu Ala Ser Thr Ala Ala
        115                 120                 125

Leu Arg Ser Pro Thr Leu Arg Glu Ala Ala Ser Ser Cys Lys Leu Arg
    130                 135                 140

Leu Trp Tyr His Ala Ala Ser Gly Asp Val Ala Glu Leu Arg Val Glu
145                 150                 155                 160

Leu Thr His Gly Ala Glu Thr Leu Thr Leu Trp Gln Ser Thr Gly Pro
                165                 170                 175

Trp Gly Pro Gly Trp Gln Glu Leu Ala Val Thr Thr Gly Arg Ile Arg
            180                 185                 190

Gly Asp Phe Arg Val Thr Phe Ser Ala Thr Arg Asn Ala Thr His Arg
        195                 200                 205

Gly Ala Val Ala Leu Asp Asp Leu Glu Phe Trp Asp Cys Gly Leu Pro
    210                 215                 220

Thr Pro Gln Ala Asn Cys Pro Pro Gly His His His Cys Gln Asn Lys
225                 230                 235                 240

Val Cys Val Glu Pro Gln Gln Leu Cys Asp Gly Glu Asp Asn Cys Gly
                245                 250                 255

Asp Leu Ser Asp Glu Asn Pro Leu Thr Cys Gly Arg His Ile Ala Thr
            260                 265                 270

Asp Phe Glu Thr Gly Leu Gly Pro Trp Asn Arg Ser Glu Gly Trp Ser
        275                 280                 285

Arg Asn His Arg Ala Gly Gly Pro Glu Arg Pro Ser Trp Pro Arg Arg
    290                 295                 300

Asp His Ser Arg Asn Ser Ala Gln Gly Ser Phe Leu Val Ser Val Ala
305                 310                 315                 320

Glu Pro Gly Thr Pro Ala Ile Leu Ser Ser Pro Glu Phe Gln Ala Ser
                325                 330                 335

Gly Thr Ser Asn Cys Ser Val Arg Trp Leu Val Phe Tyr Gln Tyr Leu
            340                 345                 350
```

```
Ser Gly Ser Glu Ala Gly Cys Leu Gln Leu Phe Leu Gln Thr Leu Gly
        355                 360                 365

Pro Gly Ala Pro Arg Ala Pro Val Leu Leu Arg Arg Arg Arg Gly Glu
    370                 375                 380

Leu Gly Thr Ala Trp Val Arg Asp Arg Val Asp Ile Gln Ser Ala Tyr
385                 390                 395                 400

Pro Phe Gln Ile Leu Leu Ala Gly Gln Thr Gly Pro Gly Gly Val Val
                405                 410                 415

Gly Leu Asp Asp Leu Ile Leu Ser Asp His Cys Arg Pro Val Ser Glu
            420                 425                 430

Val Ser Thr Leu Gln Pro Leu Pro Pro Gly Pro Arg Ala Pro Ala Pro
        435                 440                 445

Gln Pro Leu Pro Pro Ser Ser Arg Leu Gln Asp Ser Cys Lys Gln Gly
    450                 455                 460

His Leu Ala Cys Gly Asp Leu Cys Val Pro Pro Glu Gln Leu Cys Asp
465                 470                 475                 480

Phe Glu Glu Gln Cys Ala Gly Gly Glu Asp Glu Gln Ala Cys Gly Thr
                485                 490                 495

Thr Asp Phe Glu Ser Pro Glu Ala Gly Gly Trp Glu Asp Ala Ser Val
            500                 505                 510

Gly Arg Leu Gln Trp Arg Arg Val Ser Ala Gln Glu Ser Gln Gly Ser
        515                 520                 525

Ser Ala Ala Ala Ala Gly His Phe Leu Ser Leu Gln Arg Ala Trp Gly
    530                 535                 540

Gln Leu Gly Ala Glu Ala Arg Val Leu Thr Pro Leu Leu Gly Pro Ser
545                 550                 555                 560

Gly Pro Ser Cys Glu Leu His Leu Ala Tyr Tyr Leu Gln Ser Gln Pro
                565                 570                 575

Arg Gly Phe Leu Ala Leu Val Val Val Asp Asn Gly Ser Arg Glu Leu
            580                 585                 590

Ala Trp Gln Ala Leu Ser Ser Ser Ala Gly Ile Trp Lys Val Asp Lys
        595                 600                 605

Val Leu Leu Gly Ala Arg Arg Arg Pro Phe Arg Leu Glu Phe Val Gly
    610                 615                 620

Leu Val Asp Leu Asp Gly Pro Asp Gln Gln Gly Ala Gly Val Asp Asn
625                 630                 635                 640

Val Thr Leu Arg Asp Cys Ser Pro Thr Val Thr Thr Glu Arg Asp Arg
                645                 650                 655

Glu Val Ser Cys Asn Phe Glu Arg Asp Thr Cys Ser Trp Tyr Pro Gly
            660                 665                 670

His Leu Ser Asp Thr His Trp Arg Trp Val Glu Ser Arg Gly Pro Asp
        675                 680                 685
```

```
His Asp His Thr Thr Gly Gln Gly His Phe Val Leu Leu Asp Pro Thr
    690                 695                 700

Asp Pro Leu Ala Trp Gly His Ser Ala His Leu Leu Ser Arg Pro Gln
705                 710                 715                 720

Val Pro Ala Ala Pro Thr Glu Cys Leu Ser Phe Trp Tyr His Leu His
                725                 730                 735

Gly Pro Gln Ile Gly Thr Leu Arg Leu Ala Met Arg Arg Glu Gly Glu
            740                 745                 750

Glu Thr His Leu Trp Ser Arg Ser Gly Thr Gln Gly Asn Arg Trp His
        755                 760                 765

Glu Ala Trp Ala Thr Leu Ser His Gln Pro Gly Ser His Ala Gln Tyr
    770                 775                 780

Gln Leu Leu Phe Glu Gly Leu Arg Asp Gly Tyr His Gly Thr Met Ala
785                 790                 795                 800

Leu Asp Asp Val Ala Val Arg Pro Gly Pro Cys Trp Ala Pro Asn Tyr
                805                 810                 815

Cys Ser Phe Glu Asp Ser Asp Cys Gly Phe Ser Pro Gly Gly Gln Gly
            820                 825                 830

Leu Trp Arg Arg Gln Ala Asn Ala Ser Gly His Ala Ala Trp Gly Pro
        835                 840                 845

Pro Thr Asp His Thr Thr Glu Thr Ala Gln Gly His Tyr Met Val Val
    850                 855                 860

Asp Thr Ser Pro Asp Ala Leu Pro Arg Gly Gln Thr Ala Ser Leu Thr
865                 870                 875                 880

Ser Lys Glu His Arg Pro Leu Ala Gln Pro Ala Cys Leu Thr Phe Trp
                885                 890                 895

Tyr His Gly Ser Leu Arg Ser Pro Gly Thr Leu Arg Val Tyr Leu Glu
            900                 905                 910

Glu Arg Gly Arg His Gln Val Leu Ser Leu Ser Ala His Gly Gly Leu
        915                 920                 925

Ala Trp Arg Leu Gly Ser Met Asp Val Gln Ala Glu Arg Ala Trp Arg
    930                 935                 940

Val Val Phe Glu Ala Val Ala Ala Gly Val Ala His Ser Tyr Val Ala
945                 950                 955                 960

Leu Asp Asp Leu Leu Leu Gln Asp Gly Pro Cys Pro Gln Pro Gly Ser
                965                 970                 975

Cys Asp Phe Glu Ser Gly Leu Cys Gly Trp Ser His Leu Ala Trp Pro
            980                 985                 990

Gly Leu Gly Gly Tyr Ser Trp Asp Trp Gly Gly Gly Ala Thr Pro Ser
        995                1000                1005

Arg Tyr Pro Gln Pro Pro Val Asp His Thr Leu Gly Thr Glu Ala Gly
   1010                1015                1020
```

```
His Phe Ala Phe Phe Glu Thr Gly Val Leu Gly Pro Gly Gly Arg Ala
1025                1030                1035                1040

Ala Trp Leu Arg Ser Glu Pro Leu Pro Ala Thr Pro Ala Ser Cys Leu
                1045                1050                1055

Arg Phe Trp Tyr His Met Gly Phe Pro Glu His Phe Tyr Lys Gly Glu
            1060                1065                1070

Leu Lys Val Leu Leu His Ser Ala Gln Gly Gln Leu Ala Val Trp Gly
        1075                1080                1085

Ala Gly Gly His Arg Arg His Gln Trp Leu Glu Ala Gln Val Glu Val
    1090                1095                1100

Ala Ser Ala Lys Glu Phe Gln Ile Val Phe Glu Ala Thr Leu Gly Gly
1105                1110                1115                1120

Gln Pro Ala Leu Gly Pro Ile Ala Leu Asp Asp Val Glu Tyr Leu Ala
                1125                1130                1135

Gly Gln His Cys Gln Gln Pro Ala Pro Ser Pro Gly Asn Thr Ala Ala
            1140                1145                1150

Pro Gly Ser Val Pro Ala Val Val Gly Ser Ala Leu Leu Leu Leu Met
        1155                1160                1165

Leu Leu Val Leu Leu Gly Leu Gly Gly Arg Arg Trp Leu Gln Lys Lys
    1170                1175                1180

Gly Ser Cys Pro Phe Gln Ser Asn Thr Glu Ala Thr Ala Pro Gly Phe
1185                1190                1195                1200

Asp Asn Ile Leu Phe Asn Ala Asp Gly Val Thr Leu Pro Ala Ser Val
                1205                1210                1215

Thr Ser Asp Pro
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<210> 21
<211> 2762
<212> DNA
<213> Homo sapiens

<400> 21

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gccgcgccga gagctcggga ggcgtgagca cggaccactc ggagctcccc atcggcgccg 1020
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<210> 22
<211> 914
<212> PRT
<213> Homo sapiens

<400> 22

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Met Gly Trp Arg Pro Arg Arg Ala Arg Gly Thr Pro Leu Leu Leu Leu
  1               5                  10                  15

Leu Leu Leu Leu Leu Leu Trp Pro Val Pro Gly Ala Gly Val Leu Gln
             20                  25                  30

Gly His Ile Pro Gly Gln Pro Val Thr Pro His Trp Val Leu Asp Gly
         35                  40                  45

Gln Pro Trp Arg Thr Val Ser Leu Glu Glu Pro Val Ser Lys Pro Asp
     50                  55                  60

Met Gly Leu Val Ala Leu Glu Ala Glu Gly Gln Glu Leu Leu Leu Glu
 65                  70                  75                  80

Leu Glu Lys Asn His Arg Leu Leu Ala Pro Gly Tyr Ile Glu Thr His
                 85                  90                  95

Tyr Gly Pro Asp Gly Gln Pro Val Val Leu Ala Pro Asn His Thr Asp
            100                 105                 110

His Cys His Tyr Gln Gly Arg Val Arg Gly Phe Pro Asp Ser Trp Val
        115                 120                 125

Val Leu Cys Thr Cys Ser Gly Met Ser Gly Leu Ile Thr Leu Ser Arg
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130 135 140

Asn Ala Ser Tyr Tyr Leu Arg Pro Trp Pro Pro Arg Gly Ser Lys Asp
145 150 155 160

Phe Ser Thr His Glu Ile Phe Arg Met Glu Gln Leu Leu Thr Trp Lys
165 170 175

Gly Thr Cys Gly His Arg Asp Pro Gly Asn Lys Ala Gly Met Thr Ser
180 185 190

Leu Pro Gly Gly Pro Gln Ser Arg Gly Arg Arg Glu Ala Arg Arg Thr
195 200 205

Arg Lys Tyr Leu Glu Leu Tyr Ile Val Ala Asp His Thr Leu Phe Leu
210 215 220

Thr Arg His Arg Asn Leu Asn His Thr Lys Gln Arg Leu Leu Glu Val
225 230 235 240

Ala Asn Tyr Val Asp Gln Leu Leu Arg Thr Leu Asp Ile Gln Val Ala
245 250 255

Leu Thr Gly Leu Glu Val Trp Thr Glu Arg Asp Arg Ser Arg Val Thr
260 265 270

Gln Asp Ala Asn Ala Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg Gly
275 280 285

Leu Trp Ala Gln Arg Pro His Asp Ser Ala Gln Leu Leu Thr Gly Arg
290 295 300

Ala Phe Gln Gly Ala Thr Val Gly Leu Ala Pro Val Glu Gly Met Cys
305 310 315 320

Arg Ala Glu Ser Ser Gly Gly Val Ser Thr Asp His Ser Glu Leu Pro
325 330 335

Ile Gly Ala Ala Ala Thr Met Ala His Glu Ile Gly His Ser Leu Gly
340 345 350

Leu Ser His Asp Pro Asp Gly Cys Cys Val Glu Ala Ala Ala Glu Ser
355 360 365

Gly Gly Cys Val Met Ala Ala Ala Thr Gly His Pro Phe Pro Arg Val
370 375 380

Phe Ser Ala Cys Ser Arg Arg Gln Leu Arg Ala Phe Phe Arg Lys Gly
385 390 395 400

Gly Gly Ala Cys Leu Ser Asn Ala Pro Asp Pro Gly Leu Pro Val Pro
405 410 415

Pro Ala Leu Cys Gly Asn Gly Phe Val Glu Ala Gly Glu Glu Cys Asp
420 425 430

Cys Gly Pro Gly Gln Glu Cys Arg Asp Leu Cys Cys Phe Ala His Asn
435 440 445

Cys Ser Leu Arg Pro Gly Ala Gln Cys Ala His Gly Asp Cys Cys Val
450 455 460

Arg Cys Leu Leu Lys Pro Ala Gly Ala Leu Cys Arg Gln Ala Met Gly

```
465                 470                 475                 480

Asp Cys Asp Leu Pro Glu Phe Cys Thr Gly Thr Ser Ser His Cys Pro
                485                 490                 495

Pro Asp Val Tyr Leu Leu Asp Gly Ser Pro Cys Ala Arg Gly Ser Gly
            500                 505                 510

Tyr Cys Trp Asp Gly Ala Cys Pro Thr Leu Glu Gln Gln Cys Gln Gln
        515                 520                 525

Leu Trp Gly Pro Gly Ser His Pro Ala Pro Glu Ala Cys Phe Gln Val
    530                 535                 540

Val Asn Ser Ala Gly Asp Ala His Gly Asn Cys Gly Gln Asp Ser Glu
545                 550                 555                 560

Gly His Phe Leu Pro Cys Ala Gly Arg Asp Ala Leu Cys Gly Lys Leu
                565                 570                 575

Gln Cys Gln Gly Gly Lys Pro Ser Leu Leu Ala Pro His Met Val Pro
            580                 585                 590

Val Asp Ser Thr Val His Leu Asp Gly Gln Glu Val Thr Cys Arg Gly
        595                 600                 605

Ala Leu Ala Leu Pro Ser Ala Gln Leu Asp Leu Leu Gly Leu Gly Leu
    610                 615                 620

Val Glu Pro Gly Thr Gln Cys Gly Pro Arg Met Val Cys Gln Ser Arg
625                 630                 635                 640

Arg Cys Arg Lys Asn Ala Phe Gln Glu Leu Gln Arg Cys Leu Thr Ala
                645                 650                 655

Cys His Ser His Gly Val Cys Asn Ser Asn His Asn Cys His Cys Ala
            660                 665                 670

Pro Gly Trp Ala Pro Pro Phe Cys Asp Lys Pro Gly Phe Gly Gly Ser
        675                 680                 685

Met Asp Ser Gly Pro Val Gln Ala Glu Asn His Asp Thr Phe Leu Leu
    690                 695                 700

Ala Met Leu Leu Ser Val Leu Leu Pro Leu Leu Pro Gly Ala Gly Leu
705                 710                 715                 720

Ala Trp Cys Cys Tyr Arg Leu Pro Gly Ala His Leu Gln Arg Cys Ser
                725                 730                 735

Trp Gly Cys Arg Arg Asp Pro Ala Cys Ser Gly Pro Lys Asp Gly Pro
            740                 745                 750

His Arg Asp His Pro Leu Gly Gly Val His Pro Met Glu Leu Gly Pro
        755                 760                 765

Thr Ala Thr Gly Gln Pro Trp Pro Leu Ala Pro Gly Ala Pro Ala Asp
    770                 775                 780

His Ile His Asn Ile Tyr Pro Pro Pro Phe Leu Pro Asp Pro Glu Asn
785                 790                 795                 800

Ser His Glu Pro Ser Ser His Pro Glu Lys Pro Leu Pro Ala Val Ser
```

805 810 815

Pro Asp Pro Gln Gly Gly Ser Leu Ala Ala Trp Gly Pro Ser Pro Leu
820 825 830

Gly Asp Asn Ile Ser Ser Ser Phe Ser Ala Asp Gln Val Gln Met Pro
835 840 845

Arg Ser Cys Leu Cys Gly Glu Pro Trp Gly Gly His Val Gly Arg Lys
850 855 860

Glu Gly Ser Lys Arg Gly Gly Pro Arg Leu Gly Glu Arg Pro Val Trp
865 870 875 880

Ser Pro Gly Ser Pro Gly Cys Ala Ala Glu Leu Glu Lys Arg Ser Ser
885 890 895

Ala Glu Arg Ser Trp His Gly Ala Asn Ser Arg Lys Ala Gly Gly Thr
900 905 910

Gln Lys

<210> 23
<211> 2705
<212> DNA
<213> Homo sapiens

<400> 23
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<210> 24
<211> 895
<212> PRT
<213> Homo sapiens

<400> 24

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Met Gly Trp Arg Pro Arg Arg Ala Arg Gly Thr Pro Leu Leu Leu Leu
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Leu Leu Leu Leu Leu Leu Trp Pro Val Pro Gly Ala Gly Val Leu Gln
            20                  25                  30

Gly His Ile Pro Gly Gln Pro Val Thr Pro His Trp Val Leu Asp Gly
        35                  40                  45

Gln Pro Trp Arg Thr Val Ser Leu Glu Glu Pro Val Ser Lys Pro Asp
    50                  55                  60

Met Gly Leu Val Ala Leu Glu Ala Glu Gly Gln Glu Leu Leu Leu Glu
65                  70                  75                  80

Leu Glu Lys Asn His Arg Leu Leu Ala Pro Gly Tyr Ile Glu Thr His
                85                  90                  95

Tyr Gly Pro Asp Gly Gln Pro Val Val Leu Ala Pro Asn His Thr Asp
            100                 105                 110

His Cys His Tyr Gln Gly Arg Val Arg Gly Phe Pro Asp Ser Trp Val
        115                 120                 125

Val Leu Cys Thr Cys Ser Gly Met Ser Gly Leu Ile Thr Leu Ser Arg
    130                 135                 140

Asn Ala Ser Tyr Tyr Leu Arg Pro Trp Pro Pro Arg Gly Ser Lys Asp
145                 150                 155                 160

Phe Ser Thr His Glu Ile Phe Arg Met Glu Gln Leu Leu Thr Trp Lys
                165                 170                 175

Gly Thr Cys Gly His Arg Asp Pro Gly Asn Lys Ala Gly Met Thr Ser
            180                 185                 190

Leu Pro Gly Gly Pro Gln Ser Arg Gly Arg Arg Glu Ala Arg Arg Thr
        195                 200                 205

Arg Lys Tyr Leu Glu Leu Tyr Ile Val Ala Asp His Thr Leu Phe Leu
    210                 215                 220
```

```
Thr Arg His Arg Asn Leu Asn His Thr Lys Gln Arg Leu Leu Glu Val
225                 230                 235                 240

Ala Asn Tyr Val Asp Gln Leu Leu Arg Thr Leu Asp Ile Gln Val Ala
                245                 250                 255

Leu Thr Gly Leu Glu Val Trp Thr Glu Arg Asp Arg Ser Arg Val Thr
            260                 265                 270

Gln Asp Ala Asn Ala Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg Gly
        275                 280                 285

Leu Trp Ala Gln Arg Pro His Asp Ser Ala Gln Leu Leu Thr Gly Arg
    290                 295                 300

Ala Phe Gln Gly Ala Thr Val Gly Leu Ala Pro Val Glu Gly Met Cys
305                 310                 315                 320

Arg Ala Glu Ser Ser Gly Gly Val Ser Thr Asp His Ser Glu Leu Pro
                325                 330                 335

Ile Gly Ala Ala Ala Thr Met Ala His Glu Ile Gly His Ser Leu Gly
            340                 345                 350

Leu Ser His Asp Pro Asp Gly Cys Cys Val Glu Ala Ala Ala Glu Ser
        355                 360                 365

Gly Gly Cys Val Met Ala Ala Ala Thr Gly His Pro Phe Pro Arg Val
    370                 375                 380

Phe Ser Ala Cys Ser Arg Arg Gln Leu Arg Ala Phe Phe Arg Lys Gly
385                 390                 395                 400

Gly Gly Ala Cys Leu Ser Asn Ala Pro Asp Pro Gly Leu Pro Val Pro
                405                 410                 415

Pro Ala Leu Cys Gly Asn Gly Phe Val Glu Ala Gly Glu Glu Cys Asp
            420                 425                 430

Cys Gly Pro Gly Gln Glu Cys Arg Asp Leu Cys Cys Phe Ala His Asn
        435                 440                 445

Cys Ser Leu Arg Pro Gly Ala Gln Cys Ala His Gly Asp Cys Cys Val
    450                 455                 460

Arg Cys Leu Leu Lys Pro Ala Gly Ala Leu Cys Arg Gln Ala Met Gly
465                 470                 475                 480

Asp Cys Asp Leu Pro Glu Phe Cys Thr Gly Thr Ser Ser His Cys Pro
                485                 490                 495

Pro Asp Val Tyr Leu Leu Asp Gly Ser Pro Cys Ala Lys Gly Ser Gly
            500                 505                 510

Tyr Cys Trp Asp Gly Ala Cys Pro Thr Leu Glu Gln Gln Cys Gln Gln
        515                 520                 525

Leu Trp Gly Pro Gly Ser His Pro Ala Pro Glu Ala Cys Phe Gln Val
    530                 535                 540

Val Asn Ser Ala Gly Asp Ala His Gly Asn Cys Gly Gln Asp Ser Glu
545                 550                 555                 560
```

```
Gly His Phe Leu Pro Cys Ala Gly Arg Asp Ala Leu Cys Gly Lys Leu
                565                 570                 575

Gln Cys Gln Gly Gly Lys Pro Ser Leu Leu Ala Pro His Met Val Pro
            580                 585                 590

Val Asp Ser Thr Val His Leu Asp Gly Gln Glu Val Thr Cys Arg Gly
        595                 600                 605

Ala Leu Ala Leu Pro Ser Ala Gln Leu Asp Leu Leu Gly Leu Gly Leu
    610                 615                 620

Val Glu Pro Gly Thr Gln Cys Gly Pro Arg Met Val Cys Gln Ser Arg
625                 630                 635                 640

Arg Cys Arg Lys Asn Ala Phe Gln Glu Leu Gln Arg Cys Leu Thr Ala
                645                 650                 655

Cys His Ser His Gly Val Cys Asn Ser Asn His Asn Cys His Cys Ala
            660                 665                 670

Pro Gly Trp Ala Pro Pro Phe Cys Asp Lys Pro Gly Phe Gly Gly Ser
        675                 680                 685

Met Asp Ser Gly Pro Val Gln Ala Glu Asn His Asp Thr Phe Leu Leu
    690                 695                 700

Ala Met Leu Leu Ser Val Leu Leu Pro Leu Leu Pro Gly Ala Gly Leu
705                 710                 715                 720

Ala Trp Cys Cys Tyr Arg Leu Pro Gly Ala His Leu Gln Arg Cys Ser
                725                 730                 735

Trp Gly Cys Arg Arg Asp Pro Ala Cys Ser Gly Pro Lys Asp Gly Pro
            740                 745                 750

His Arg Asp His Pro Leu Gly Gly Val His Pro Met Glu Leu Gly Pro
        755                 760                 765

Thr Ala Thr Gly Gln Pro Trp Pro Leu Asp Pro Glu Asn Ser His Glu
    770                 775                 780

Pro Ser Ser His Pro Glu Lys Pro Leu Pro Ala Val Ser Pro Asp Pro
785                 790                 795                 800

Gln Gly Gly Ser Leu Ala Ala Trp Gly Pro Ser Pro Leu Gly Asp Asn
                805                 810                 815

Ile Ser Ser Ser Phe Ser Ala Asp Gln Val Gln Met Pro Arg Ser Cys
            820                 825                 830

Leu Cys Gly Glu Pro Trp Gly Gly His Val Gly Arg Lys Glu Gly Ser
        835                 840                 845

Lys Arg Gly Gly Pro Arg Leu Gly Glu Arg Pro Val Trp Ser Pro Gly
    850                 855                 860

Ser Pro Gly Cys Ala Ala Glu Leu Glu Lys Arg Ser Ser Ala Glu Arg
865                 870                 875                 880

Ser Trp His Gly Ala Asn Ser Arg Lys Ala Gly Gly Thr Gln Lys
                885                 890                 895
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<210> 25
<211> 2642
<212> DNA
<213> Homo sapiens

<400> 25
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gg 2642

<210> 26
<211> 874
<212> PRT
<213> Homo sapiens

<400> 26
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  1   5   10   15

```
Leu Leu Leu Leu Leu Leu Trp Pro Val Pro Gly Ala Gly Val Leu Gln
            20                  25                  30

Gly His Ile Pro Gly Gln Pro Val Thr Pro His Trp Val Leu Asp Gly
        35                  40                  45

Gln Pro Trp Arg Thr Val Ser Leu Glu Glu Pro Val Ser Lys Pro Asp
    50                  55                  60

Met Gly Leu Val Ala Leu Glu Ala Glu Gly Gln Glu Leu Leu Leu Glu
65                  70                  75                  80

Leu Glu Lys Asn His Arg Leu Leu Ala Pro Gly Tyr Ile Glu Thr His
                85                  90                  95

Tyr Gly Pro Asp Gly Gln Pro Val Val Leu Ala Pro Asn His Thr Asp
            100                 105                 110

His Cys His Tyr Gln Gly Arg Val Arg Gly Phe Pro Asp Ser Trp Val
        115                 120                 125

Val Leu Cys Thr Cys Ser Gly Met Ser Gly Leu Ile Thr Leu Ser Arg
    130                 135                 140

Asn Ala Ser Tyr Tyr Leu Arg Pro Trp Pro Pro Arg Gly Ser Lys Asp
145                 150                 155                 160

Phe Ser Thr His Glu Ile Phe Arg Met Glu Gln Leu Leu Thr Trp Lys
                165                 170                 175

Gly Thr Cys Gly His Arg Asp Pro Gly Asn Lys Ala Gly Met Thr Ser
            180                 185                 190

Leu Pro Gly Gly Pro Gln Ser Arg Gly Arg Arg Glu Ala Arg Arg Thr
        195                 200                 205

Arg Lys Tyr Leu Glu Leu Tyr Ile Val Ala Asp His Thr Leu Phe Leu
    210                 215                 220

Thr Arg His Arg Asn Leu Asn His Thr Lys Gln Arg Leu Leu Glu Val
225                 230                 235                 240

Ala Asn Tyr Val Asp Gln Leu Leu Arg Thr Leu Asp Ile Gln Val Ala
                245                 250                 255

Leu Thr Gly Leu Glu Val Trp Thr Glu Arg Asp Arg Ser Arg Val Thr
            260                 265                 270

Gln Asp Ala Asn Ala Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg Gly
        275                 280                 285

Leu Trp Ala Gln Arg Pro His Asp Ser Ala Gln Leu Leu Thr Gly Arg
    290                 295                 300

Ala Phe Gln Gly Ala Thr Val Gly Leu Ala Pro Val Glu Gly Met Cys
305                 310                 315                 320

Arg Ala Glu Ser Ser Gly Gly Val Ser Thr Asp His Ser Glu Leu Pro
                325                 330                 335

Ile Gly Ala Ala Ala Thr Met Ala His Glu Ile Gly His Ser Leu Gly
            340                 345                 350
```

```
Leu Ser His Asp Pro Asp Gly Cys Cys Val Glu Ala Ala Ala Glu Ser
        355                 360                 365

Gly Gly Cys Val Met Ala Ala Ala Thr Gly His Pro Phe Pro Arg Val
    370                 375                 380

Phe Ser Ala Cys Ser Arg Arg Gln Leu Arg Ala Phe Phe Arg Lys Gly
385                 390                 395                 400

Gly Gly Ala Cys Leu Ser Asn Ala Pro Asp Pro Gly Leu Pro Val Pro
                405                 410                 415

Pro Ala Leu Cys Gly Asn Gly Phe Val Glu Ala Gly Glu Glu Cys Asp
            420                 425                 430

Cys Gly Pro Gly Gln Glu Cys Arg Asp Leu Cys Cys Phe Ala His Asn
        435                 440                 445

Cys Ser Leu Arg Pro Gly Ala Gln Cys Ala His Gly Asp Cys Cys Val
    450                 455                 460

Arg Cys Leu Leu Lys Pro Ala Gly Ala Leu Cys Arg Gln Ala Met Gly
465                 470                 475                 480

Asp Cys Asp Leu Pro Glu Phe Cys Thr Gly Thr Ser Ser His Cys Pro
                485                 490                 495

Pro Asp Val Tyr Leu Leu Asp Gly Ser Pro Cys Ala Lys Gly Ser Gly
            500                 505                 510

Tyr Cys Trp Asp Gly Ala Cys Pro Thr Leu Glu Gln Gln Cys Gln Gln
        515                 520                 525

Leu Trp Gly Pro Gly Ser His Pro Ala Pro Glu Ala Cys Phe Gln Val
    530                 535                 540

Val Asn Ser Ala Gly Asp Ala His Gly Asn Cys Gly Gln Asp Ser Glu
545                 550                 555                 560

Gly His Phe Leu Pro Cys Ala Gly Arg Asp Ala Leu Cys Gly Lys Leu
                565                 570                 575

Gln Cys Gln Gly Gly Lys Pro Ser Leu Leu Ala Pro His Met Val Pro
            580                 585                 590

Val Asp Ser Thr Val His Leu Asp Gly Gln Glu Val Thr Cys Arg Gly
        595                 600                 605

Ala Leu Ala Leu Pro Ser Ala Gln Leu Asp Leu Leu Gly Leu Gly Leu
    610                 615                 620

Val Glu Pro Gly Thr Gln Cys Gly Pro Arg Met Val Cys Gln Ser Arg
625                 630                 635                 640

Arg Cys Arg Lys Asn Ala Phe Gln Glu Leu Gln Arg Cys Leu Thr Ala
                645                 650                 655

Cys His Ser His Gly Val Cys Asn Ser Asn His Asn Cys His Cys Ala
            660                 665                 670

Pro Gly Trp Ala Pro Pro Phe Cys Asp Lys Pro Gly Phe Gly Gly Ser
        675                 680                 685
```

```
Met Asp Ser Gly Pro Val Gln Ala Glu Asn His Asp Thr Phe Leu Leu
    690                 695                 700

Ala Met Leu Leu Ser Val Leu Leu Pro Leu Leu Pro Gly Ala Gly Leu
705                 710                 715                 720

Ala Trp Cys Cys Tyr Arg Leu Pro Gly Ala His Leu Gln Arg Cys Ser
                725                 730                 735

Trp Gly Cys Arg Arg Asp Pro Ala Cys Ser Gly Pro Lys Asp Gly Pro
            740                 745                 750

His Arg Asp His Pro Leu Gly Gly Val His Pro Met Glu Leu Gly Pro
        755                 760                 765

Thr Ala Thr Gly Gln Pro Trp Pro Leu Asp Pro Glu Asn Ser His Glu
    770                 775                 780

Pro Ser Ser His Pro Glu Lys Pro Leu Pro Ala Val Ser Pro Asp Pro
785                 790                 795                 800

Gln Ala Asp Gln Val Gln Met Pro Arg Ser Cys Leu Cys Gly Glu Pro
                805                 810                 815

Trp Gly Gly His Val Gly Arg Lys Glu Gly Ser Lys Arg Gly Gly Pro
            820                 825                 830

Arg Leu Gly Glu Arg Pro Val Trp Ser Pro Gly Ser Pro Gly Cys Ala
        835                 840                 845

Ala Glu Leu Glu Lys Arg Ser Ser Ala Glu Arg Ser Trp His Gly Ala
    850                 855                 860

Asn Ser Arg Lys Ala Gly Gly Thr Gln Lys
865                 870
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<210> 27
<211> 1307
<212> DNA
<213> Homo sapiens

<400> 27

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caaagaactc ctgttacgga tatttttctt tctagatgtt gttaccctgt gccgctgtgc 120
tcaggtctcc agggcctgga atgttctggc tctggatggc agtaactggc agcgaattga 180
cctatttgat ttccagaggg atattgaggg ccgagtagtg gagaatattt caaaacgatg 240
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<210> 28
<211> 422
<212> PRT
<213> Homo sapiens

<400> 28
Met Phe Ser Asn Ser Asp Glu Ala Val Ile Asn Lys Lys Leu Pro Lys
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Glu Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Val Val Thr Leu Cys
20 25 30

Arg Cys Ala Gln Val Ser Arg Ala Trp Asn Val Leu Ala Leu Asp Gly
35 40 45

Ser Asn Trp Gln Arg Ile Asp Leu Phe Asp Phe Gln Arg Asp Ile Glu
50 55 60

Gly Arg Val Val Glu Asn Ile Ser Lys Arg Cys Gly Gly Phe Leu Arg
65 70 75 80

Lys Leu Ser Leu Arg Gly Cys Leu Gly Val Gly Asp Asn Ala Leu Arg
85 90 95

Thr Phe Ala Gln Asn Cys Arg Asn Ile Glu Val Leu Asn Leu Asn Gly
100 105 110

Cys Thr Lys Thr Ile Asp Ala Thr Cys Thr Ser Leu Ser Lys Phe Cys
115 120 125

Ser Lys Leu Arg His Leu Asp Leu Ala Ser Cys Thr Ser Ile Thr Asn
130 135 140

Met Pro Leu Lys Ala Leu Ser Glu Gly Cys Pro Leu Leu Glu Gln Leu
145 150 155 160

Asn Ile Ser Trp Cys Asp Gln Val Thr Lys Asp Gly Ile Gln Ala Leu
165 170 175

Val Arg Gly Cys Gly Gly Leu Lys Ala Leu Phe Leu Lys Gly Cys Thr
180 185 190

Gln Leu Glu Asp Glu Ala Leu Lys Tyr Ile Gly Ala His Cys Pro Glu
195 200 205

Leu Val Thr Leu Asn Leu Gln Thr Cys Leu Gln Ile Thr Asp Glu Gly
210 215 220

Leu Ile Thr Ile Cys Arg Gly Cys His Lys Leu Gln Ser Leu Cys Ala
225 230 235 240

Ser Gly Cys Ser Asn Ile Thr Asp Ala Ile Leu Asn Ala Leu Gly Gln
245 250 255

Asn Cys Pro Arg Leu Arg Ile Leu Glu Val Ala Arg Cys Ser Gln Leu
260 265 270

Thr Asp Val Gly Phe Thr Thr Leu Ala Arg Asn Cys His Glu Leu Glu
275 280 285

```
Lys Met Asp Leu Glu Glu Cys Val Gln Ile Thr Asp Ser Thr Leu Ile
    290                 295                 300

Gln Leu Ser Ile His Cys Pro Arg Leu Gln Val Leu Ser Leu Ser His
305                 310                 315                 320

Cys Glu Leu Ile Thr Asp Asp Gly Ile Arg His Leu Gly Asn Gly Ala
                325                 330                 335

Cys Ala His Asp Gln Leu Glu Val Ile Glu Leu Asp Asn Cys Pro Leu
            340                 345                 350

Ile Thr Asp Ala Ser Leu Glu His Leu Lys Ser Cys His Ser Leu Glu
        355                 360                 365

Arg Ile Glu Leu Tyr Asp Cys Gln Gln Ile Thr Arg Ala Gly Ile Lys
    370                 375                 380

Arg Leu Arg Thr His Leu Pro Asn Ile Lys Val His Ala Tyr Phe Ala
385                 390                 395                 400

Pro Val Thr Pro Pro Pro Ser Val Gly Gly Ser Arg Gln Arg Phe Cys
                405                 410                 415

Arg Cys Cys Ile Ile Leu
            420
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<210> 29
<211> 499
<212> DNA
<213> Homo sapiens

<400> 29
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<210> 30
<211> 141
<212> PRT
<213> Homo sapiens

<400> 30
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Val Leu Ala Trp Gly Ala Gly Leu Leu Trp Gln Glu Lys Asp Gln Pro
            20                  25                  30

Ile Tyr Leu Ala Val Lys Gly Val Gly Leu Asp Val Thr Ser Gly Lys
        35                  40                  45

Gly Phe Tyr Gly Gln Arg Ala Pro Tyr Asn Ala Leu Thr Arg Lys Asp
    50                  55                  60
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Ser Ala Arg Gly Val Ala Lys Val Ser Leu Asp His Val Asp Leu Thr
65 70 75 80

Cys Asp Thr Thr Gly Leu Ile Ala Lys Lys Leu Glu Ser Met Asp Asp
85 90 95

Val Phe Thr Ser Val Tyr Lys Ala Lys His Pro Ile Val Ser Tyr Arg
100 105 110

Ala Gln Thr Ile Leu Asn Glu Phe Gly Ser Pro Asn Leu Asp Phe Lys
115 120 125

Ala Glu Asp Gln Pro Leu Phe Asp Lys Lys Glu Gly Phe
130 135 140

<210> 31
<211> 1831
<212> DNA
<213> Homo sapiens

<400> 31
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<212> PRT
<213> Homo sapiens

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Thr Ala Arg Lys Ser Ile Thr Val Ile Cys Asp Phe Tyr Ser Leu Ile
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Arg Leu His Phe Ile Pro Arg Leu Gly Ser Arg Ala Asp Leu Ile Lys
    50                  55                  60

Gln Tyr Gly Arg Trp Ala Val Val Ser Gly Ala Thr Asp Gly Ile Gly
65                  70                  75                  80

Lys Ala Tyr Ala Glu Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu
                85                  90                  95

Ile Ser Arg Asn Glu Glu Lys Leu Gln Val Val Ala Lys Asp Ile Ala
            100                 105                 110

Asp Thr Tyr Lys Val Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser
        115                 120                 125

Gly Arg Glu Ile Tyr Leu Pro Ile Arg Glu Ala Leu Lys Asp Lys Asp
    130                 135                 140

Val Gly Ile Leu Val Asn Asn Val Gly Val Phe Tyr Pro Tyr Pro Gln
145                 150                 155                 160

Tyr Phe Thr Gln Leu Ser Glu Asp Lys Leu Trp Asp Ile Ile Asn Val
                165                 170                 175

Asn Ile Ala Ala Ala Ser Leu Met Val His Val Val Leu Pro Gly Met
            180                 185                 190

Val Glu Arg Lys Lys Gly Ala Ile Val Thr Ile Ser Ser Gly Ser Cys
        195                 200                 205

Cys Lys Pro Thr Pro Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr
    210                 215                 220

Leu Asp His Phe Ser Arg Ala Leu Gln Tyr Glu Tyr Ala Ser Lys Gly
225                 230                 235                 240

Ile Phe Val Gln Ser Leu Ile Pro Phe Tyr Val Ala Thr Ser Met Thr
                245                 250                 255

Ala Pro Ser Asn Phe Leu His Arg Cys Ser Trp Leu Val Pro Ser Pro
            260                 265                 270

Lys Val Tyr Ala His His Ala Val Ser Thr Leu Gly Ile Ser Lys Arg
        275                 280                 285

Thr Thr Gly Tyr Trp Ser His Ser Ile Gln Phe Leu Phe Ala Gln Tyr
    290                 295                 300

Met Pro Glu Trp Leu Trp Val Trp Gly Ala Asn Ile Leu Asn Arg Ser
305                 310                 315                 320

Leu Arg Lys Glu Ala Leu Ser Cys Thr Ala
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<212> DNA
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<211> 330
<212> PRT
<213> Homo sapiens

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Ser Cys Asn Cys Tyr Met Glu Ala Leu Ala Leu Val Gly Ala Trp Tyr
20 25 30

Thr Ala Arg Lys Ser Ile Thr Val Ile Cys Asp Phe Tyr Ser Leu Ile
35 40 45

Arg Leu His Phe Ile Pro Arg Leu Gly Ser Arg Ala Asp Leu Ile Lys
50 55 60

Gln Tyr Gly Arg Trp Ala Val Val Ser Gly Ala Thr Asp Gly Ile Gly
65 70 75 80

Lys Ala Tyr Ala Glu Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu
85 90 95

Ile Ser Arg Asn Glu Glu Lys Leu Gln Val Val Ala Lys Asp Ile Ala
100 105 110

Asp Thr Tyr Lys Val Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser
115 120 125

Gly Arg Glu Ile Tyr Leu Pro Ile Arg Glu Ala Leu Lys Asp Lys Asp
130 135 140

Val Gly Ile Leu Val Asn Asn Val Gly Val Phe Tyr Pro Tyr Pro Gln
145 150 155 160

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Tyr Phe Thr Gln Leu Ser Glu Asp Lys Leu Trp Asp Ile Ile Asn Val
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Asn Ile Ala Ala Ala Ser Leu Met Val His Val Val Leu Pro Gly Met
            180                 185                 190

Val Glu Arg Lys Lys Gly Ala Ile Val Thr Ile Ser Ser Gly Ser Cys
        195                 200                 205

Cys Lys Pro Thr Pro Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr
    210                 215                 220

Leu Asp His Phe Ser Arg Ala Leu Gln Tyr Glu Tyr Ala Ser Lys Gly
225                 230                 235                 240

Ile Phe Val Gln Ser Leu Ile Pro Phe Tyr Val Ala Thr Ser Met Thr
                245                 250                 255

Ala Pro Ser Asn Phe Leu His Arg Cys Ser Trp Leu Val Pro Ser Pro
            260                 265                 270

Lys Val Tyr Ala His His Ala Val Ser Thr Leu Gly Ile Ser Lys Arg
        275                 280                 285

Thr Thr Gly Tyr Trp Ser His Ser Ile Gln Phe Leu Phe Ala Gln Tyr
    290                 295                 300

Met Pro Glu Trp Leu Trp Val Trp Gly Ala Asn Ile Leu Asn Arg Ser
305                 310                 315                 320

Leu Arg Lys Glu Ala Leu Cys Cys Thr Ala
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<211> 7396
<212> DNA
<213> Homo sapiens

<400> 35

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<210> 36
<211> 1959
<212> PRT
<213> Homo sapiens

<400> 36

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             20                  25                  30

Trp Val Pro Ser Asp Lys Ser Gly Phe Glu Pro Ala Ser Leu Lys Glu
         35                  40                  45

Glu Val Gly Glu Glu Ala Ile Val Glu Leu Val Glu Asn Gly Lys Lys
     50                  55                  60

Val Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe
 65                  70                  75                  80

Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser
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Val Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr
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Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro
        115                 120                 125

Ile Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His
    130                 135                 140

Glu Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser
145                 150                 155                 160

Met Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser
                165                 170                 175

Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala
            180                 185                 190

Tyr Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu
        195                 200                 205

Arg Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala
    210                 215                 220

Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg
225                 230                 235                 240

Ile Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr
                245                 250                 255

Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg
            260                 265                 270

Thr Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu
        275                 280                 285

Lys Thr Asp Leu Leu Leu Glu Pro Tyr Asn Lys Tyr Arg Phe Leu Ser
    290                 295                 300

Asn Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln
305                 310                 315                 320

Glu Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Glu Glu Glu Gln
                325                 330                 335

Met Gly Leu Leu Arg Val Ile Ser Gly Val Leu Gln Leu Gly Asn Ile
            340                 345                 350

Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn
        355                 360                 365

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    370                 375                 380

Phe Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr
385                 390                 395                 400

Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala
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Leu Ala Lys Ala Thr Tyr Glu Arg Met Phe Arg Trp Leu Val Leu Arg
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Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Asp Leu Asn Ser Phe
    450                 455                 460

Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe
465                 470                 475                 480

Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg Glu Gly
                485                 490                 495

Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile
            500                 505                 510

Asp Leu Ile Glu Lys Pro Ala Gly Pro Pro Gly Ile Leu Ala Leu Leu
        515                 520                 525

Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe Val Glu
    530                 535                 540

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Gln Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys
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Val Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu
            580                 585                 590

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        595                 600                 605

Ser Glu Leu Trp Lys Asp Val Asp Arg Ile Ile Gly Leu Asp Gln Val
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Ala Gly Met Ser Glu Thr Ala Leu Pro Gly Ala Phe Lys Thr Arg Lys
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Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu Ala Lys
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Leu Met Ala Thr Leu Arg Asn Thr Asn Pro Asn Phe Val Arg Cys Ile
            660                 665                 670

Ile Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val
        675                 680                 685

Leu Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys
    690                 695                 700

Arg Gln Gly Phe Pro Asn Arg Val Val Phe Gln Glu Phe Arg Gln Arg
705                 710                 715                 720

Tyr Glu Ile Leu Thr Pro Asn Ser Ile Pro Lys Gly Phe Met Asp Gly
                725                 730                 735

Lys Gln Ala Cys Val Leu Met Ile Lys Ala Leu Glu Leu Asp Ser Asn
            740                 745                 750

Leu Tyr Arg Ile Gly Gln Ser Lys Val Phe Phe Arg Ala Gly Val Leu
```

```
        755                 760                 765

Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val Ile Ile
    770                 775                 780

Gly Phe Gln Ala Cys Cys Arg Gly Tyr Leu Ala Arg Lys Ala Phe Ala
785                 790                 795                 800

Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Leu Gln Arg Asn Cys
                805                 810                 815

Ala Ala Tyr Leu Lys Leu Arg Asn Trp Gln Trp Trp Arg Leu Phe Thr
            820                 825                 830

Lys Val Lys Pro Leu Leu Gln Val Ser Arg Gln Glu Glu Glu Met Met
        835                 840                 845

Ala Lys Glu Glu Glu Leu Val Lys Val Arg Glu Lys Gln Leu Ala Ala
    850                 855                 860

Glu Asn Arg Leu Met Glu Met Glu Thr Leu Gln Ser Gln Leu Met Ala
865                 870                 875                 880

Glu Lys Leu Gln Leu Gln Glu Gln Leu Gln Ala Glu Thr Glu Leu Cys
                885                 890                 895

Ala Glu Ala Glu Glu Leu Arg Ala Arg Leu Thr Ala Lys Lys Gln Glu
            900                 905                 910

Leu Glu Glu Ile Cys His Asp Leu Glu Ala Arg Val Glu Glu Glu Glu
        915                 920                 925

Glu Arg Tyr Gln His Leu Gln Ala Glu Lys Lys Lys Met Gln Gln Asn
    930                 935                 940

Ile Gln Glu Leu Glu Glu Gln Leu Glu Glu Glu Glu Ser Ala Arg Gln
945                 950                 955                 960

Lys Leu Gln Leu Glu Lys Val Thr Thr Glu Ala Lys Leu Lys Lys Leu
                965                 970                 975

Glu Glu Glu Gln Ile Ile Leu Glu Asp Gln Asn Cys Lys Leu Ala Lys
            980                 985                 990

Glu Lys Lys Leu Leu Glu Asp Arg Ile Ala Glu Phe Thr Thr Asn Leu
        995                1000                1005

Thr Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys
   1010                1015                1020

His Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu
1025                1030                1035                1040

Lys Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp
                1045                1050                1055

Ser Thr Asp Leu Ser Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala
            1060                1065                1070

Glu Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln Ala Ala
        1075                1080                1085

Leu Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys
```

```
1090                1095                1100

Lys Ile Arg Glu Leu Glu Ser Gln Ile Ser Glu Leu Gln Glu Asp Leu
1105                1110                1115                1120

Glu Ser Glu Arg Ala Ser Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp
                1125                1130                1135

Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Thr Leu
            1140                1145                1150

Asp Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu
        1155                1160                1165

Val Asn Ile Leu Lys Lys Thr Leu Glu Glu Glu Ala Lys Thr His Glu
    1170                1175                1180

Ala Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Val Glu Glu
1185                1190                1195                1200

Leu Ala Glu Gln Leu Glu Gln Thr Lys Arg Val Lys Ala Asn Leu Glu
                1205                1210                1215

Lys Ala Lys Gln Thr Leu Glu Asn Glu Arg Gly Glu Leu Ala Asn Glu
            1220                1225                1230

Val Lys Val Leu Leu Gln Gly Gly Arg Asp Ser Glu His Lys Arg Lys
        1235                1240                1245

Lys Val Glu Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Asn Glu Gly
    1250                1255                1260

Glu Arg Val Arg Thr Glu Leu Ala Asp Lys Val Thr Lys Leu Gln Val
1265                1270                1275                1280

Glu Leu Asp Asn Val Thr Gly Leu Leu Ser Gln Ser Asp Ser Lys Ser
                1285                1290                1295

Ser Lys Leu Thr Lys Asp Phe Ser Ala Leu Glu Ser Gln Leu Gln Asp
            1300                1305                1310

Thr Gln Glu Leu Leu Gln Glu Glu Asn Arg Gln Lys Leu Ser Leu Ser
        1315                1320                1325

Thr Lys Leu Lys Gln Val Glu Asp Glu Lys Asn Ser Phe Arg Glu Gln
    1330                1335                1340

Leu Glu Glu Glu Glu Ala Lys His Asn Leu Glu Lys Gln Ile Ala Thr
1345                1350                1355                1360

Leu His Ala Gln Val Ala Asp Met Lys Lys Lys Met Glu Asp Ser Val
                1365                1370                1375

Gly Cys Leu Glu Thr Ala Glu Glu Val Lys Arg Lys Leu Gln Lys Asp
            1380                1385                1390

Leu Glu Gly Leu Ser Gln Arg His Glu Glu Lys Val Ala Ala Tyr Asp
        1395                1400                1405

Lys Leu Glu Lys Thr Lys Thr Arg Leu Gln Gln Glu Leu Asp Asp Leu
    1410                1415                1420

Leu Val Asp Leu Asp His Gln Arg Gln Ser Ala Cys Asn Leu Glu Lys
```

```
1425                1430                1435                1440

Lys Gln Lys Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys Thr Ile Ser
                1445                1450                1455

Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala Arg Glu
            1460                1465                1470

Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu Glu Ala Met
        1475                1480                1485

Glu Gln Lys Ala Glu Leu Glu Arg Leu Asn Lys Gln Phe Arg Thr Glu
    1490                1495                1500

Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser Val His
1505                1510                1515                1520

Glu Leu Glu Lys Ser Lys Arg Ala Leu Glu Gln Gln Val Glu Glu Met
                1525                1530                1535

Lys Thr Gln Leu Glu Glu Leu Glu Asp Glu Leu Gln Ala Thr Glu Asp
            1540                1545                1550

Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala Gln Phe
        1555                1560                1565

Glu Arg Asp Leu Gln Gly Arg Asp Glu Gln Ser Glu Glu Lys Lys Lys
    1570                1575                1580

Gln Leu Val Arg Gln Val Arg Glu Met Glu Ala Glu Leu Glu Asp Glu
1585                1590                1595                1600

Arg Lys Gln Arg Ser Met Ala Val Ala Ala Arg Lys Lys Leu Glu Met
                1605                1610                1615

Asp Leu Lys Asp Leu Glu Ala His Ile Asp Ser Ala Asn Lys Asn Arg
            1620                1625                1630

Asp Glu Ala Ile Lys Gln Leu Arg Lys Leu Gln Ala Gln Met Lys Asp
        1635                1640                1645

Cys Met Arg Glu Leu Asp Asp Thr Arg Ala Ser Arg Glu Glu Ile Leu
    1650                1655                1660

Ala Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu Ala Glu
1665                1670                1675                1680

Met Ile Gln Leu Gln Glu Glu Leu Ala Ala Ala Glu Arg Ala Lys Arg
                1685                1690                1695

Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ala Asn Ser
            1700                1705                1710

Ser Gly Lys Gly Ala Leu Ala Leu Glu Glu Lys Arg Arg Leu Glu Ala
        1715                1720                1725

Arg Ile Ala Gln Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn Thr
    1730                1735                1740

Glu Leu Ile Asn Asp Arg Leu Lys Lys Ala Asn Leu Gln Ile Asp Gln
1745                1750                1755                1760

Ile Asn Ala Asp Leu Asn Leu Glu Arg Gly His Ala Gln Lys Asn Glu
```

1765 1770 1775

Asn Ala Arg Gln Gln Leu Glu Arg Gln Asn Lys Glu Leu Lys Val Lys
1780 1785 1790

Leu Gln Glu Met Glu Gly Thr Val Lys Ser Lys Tyr Lys Ala Ser Ile
1795 1800 1805

Thr Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Glu Gln Leu Asp Asn
1810 1815 1820

Glu Thr Lys Glu Arg Gln Ala Ala Cys Lys Gln Val Arg Arg Thr Glu
1825 1830 1835 1840

Lys Lys Leu Lys Asp Val Leu Leu Gln Val Asp Asp Glu Arg Arg Asn
1845 1850 1855

Ala Glu Gln Tyr Lys Asp Gln Ala Asp Lys Ala Ser Thr Arg Leu Lys
1860 1865 1870

Gln Leu Lys Arg Gln Leu Glu Glu Ala Glu Glu Glu Ala Gln Arg Ala
1875 1880 1885

Asn Ala Ser Arg Arg Lys Leu Gln Arg Glu Leu Glu Asp Ala Thr Glu
1890 1895 1900

Thr Ala Asp Ala Met Asn Arg Glu Val Ser Ser Leu Lys Asn Lys Leu
1905 1910 1915 1920

Arg Arg Gly Asp Leu Pro Phe Val Val Pro Arg Arg Met Ala Arg Lys
1925 1930 1935

Gly Ala Gly Asp Gly Ser Asp Glu Glu Val Asp Gly Lys Ala Asp Gly
1940 1945 1950

Ala Glu Ala Lys Pro Ala Glu
1955

<210> 37
<211> 530
<212> DNA
<213> Homo sapiens

<400> 37
ccatggccct gccaagtgta tcttggatgc tgctttcctg cctcatgctg ctgtctcagg 60
ttcaaggtga agaaccccag agggaactgc cctctgcacg gatccgctgt cccaaaggct 120
ccaaggccta tggctcccac tgctatgcct tgtttttgtc accaaaatcc tggacagatg 180
cagatctggc ctgccagaag cggccctctg gaaacctggt gtctgtgctc agtggggctg 240
agggatcctt cgtgtcctcc ctggtgaaga gcattggtaa cagctactca tacgtctgga 300
ttgggctcca tgaccccaca cagggcaccg agcccaatgg agaaggttgg gagtggagta 360
gcagtgatgt gatgaattac tttgcatggg agagaaatcc ctccaccatc tcaagccccg 420
gccactgtgc gagcctgtcg agaagcacag catttctgag gtggaaagat tataactgta 480
atgtgaggtt accctatgtc tgcaagttca aatactggag gcaattgtaa 530

<210> 38
<211> 175
<212> PRT
<213> Homo sapiens

<400> 38
Met Ala Leu Pro Ser Val Ser Trp Met Leu Leu Ser Cys Leu Met Leu

```
  1               5                  10                  15

Leu Ser Gln Val Gln Gly Glu Glu Pro Gln Arg Glu Leu Pro Ser Ala
            20                  25                  30

Arg Ile Arg Cys Pro Lys Gly Ser Lys Ala Tyr Gly Ser His Cys Tyr
        35                  40                  45

Ala Leu Phe Leu Ser Pro Lys Ser Trp Thr Asp Ala Asp Leu Ala Cys
    50                  55                  60

Gln Lys Arg Pro Ser Gly Asn Leu Val Ser Val Leu Ser Gly Ala Glu
65                  70                  75                  80

Gly Ser Phe Val Ser Ser Leu Val Lys Ser Ile Gly Asn Ser Tyr Ser
                85                  90                  95

Tyr Val Trp Ile Gly Leu His Asp Pro Thr Gln Gly Thr Glu Pro Asn
            100                 105                 110

Gly Glu Gly Trp Glu Trp Ser Ser Ser Asp Val Met Asn Tyr Phe Ala
        115                 120                 125

Trp Glu Arg Asn Pro Ser Thr Ile Ser Ser Pro Gly His Cys Ala Ser
    130                 135                 140

Leu Ser Arg Ser Thr Ala Phe Leu Arg Trp Lys Asp Tyr Asn Cys Asn
145                 150                 155                 160

Val Arg Leu Pro Tyr Val Cys Lys Phe Lys Tyr Trp Arg Gln Leu
                165                 170                 175


<210> 39
<211> 1069
<212> PRT
<213> Homo sapiens

<400> 39
Val Gly Glu Ala Val Gly Thr Ala Ser Cys Lys Cys Ala Ala Gly Phe
  1               5                  10                  15

Gln Gly Asn Gly Thr Ile Cys Thr Ala Ile Asn Ala Cys Glu Ile Ser
            20                  25                  30

Asn Gly Gly Cys Ser Ala Lys Ala Asp Cys Lys Arg Thr Thr Pro Gly
        35                  40                  45

Arg Arg Val Cys Thr Cys Lys Ala Gly Tyr Thr Gly Asp Gly Ile Val
    50                  55                  60

Cys Leu Glu Ile Asn Pro Cys Leu Glu Asn His Gly Gly Cys Asp Lys
65                  70                  75                  80

Asn Ala Glu Cys Thr Gln Thr Gly Pro Asn Gln Ala Ala Cys Asn Cys
                85                  90                  95

Leu Pro Ala Tyr Thr Gly Asp Gly Lys Val Cys Thr Leu Ile Asn Val
            100                 105                 110

Cys Leu Thr Lys Asn Gly Gly Cys Ser Glu Phe Ala Ile Cys Asn His
        115                 120                 125
```

```
Thr Gly Gln Val Glu Arg Thr Cys Thr Cys Lys Pro Asn Tyr Ile Gly
    130                 135                 140

Asp Gly Phe Thr Cys Arg Gly Ser Ile Tyr Gln Glu Leu Pro Lys Asn
145                 150                 155                 160

Pro Lys Thr Ser Gln Tyr Phe Phe Gln Leu Gln Glu His Phe Val Lys
                165                 170                 175

Asp Leu Val Gly Pro Gly Pro Phe Thr Val Phe Ala Pro Leu Ser Ala
            180                 185                 190

Ala Phe Asp Glu Glu Ala Arg Val Lys Asp Trp Asp Lys Tyr Gly Leu
        195                 200                 205

Met Pro Gln Val Leu Arg Tyr His Val Val Ala Cys His Gln Leu Leu
    210                 215                 220

Leu Glu Asn Leu Lys Leu Ile Ser Asn Ala Thr Ser Leu Gln Gly Glu
225                 230                 235                 240

Pro Ile Val Ile Ser Val Ser Gln Ser Thr Val Tyr Ile Asn Asn Lys
                245                 250                 255

Ala Lys Ile Ile Ser Ser Asp Ile Ile Ser Thr Asn Gly Ile Val His
            260                 265                 270

Ile Ile Asp Lys Leu Leu Ser Pro Lys Asn Leu Leu Ile Thr Pro Lys
        275                 280                 285

Asp Asn Ser Gly Arg Ile Leu Gln Asn Leu Thr Thr Leu Ala Thr Asn
    290                 295                 300

Asn Gly Tyr Ile Lys Phe Ser Asn Leu Ile Gln Asp Ser Gly Leu Leu
305                 310                 315                 320

Ser Val Ile Thr Asp Pro Ile His Thr Pro Val Thr Leu Phe Trp Pro
                325                 330                 335

Thr Asp Gln Ala Leu His Ala Leu Pro Ala Glu Gln Gln Asp Phe Leu
            340                 345                 350

Phe Asn Gln Asp Asn Lys Asp Lys Leu Lys Glu Tyr Leu Lys Phe His
        355                 360                 365

Val Ile Arg Asp Ala Lys Val Leu Ala Val Asp Leu Pro Thr Ser Thr
    370                 375                 380

Ala Trp Lys Thr Leu Gln Gly Ser Glu Leu Ser Val Lys Cys Gly Ala
385                 390                 395                 400

Gly Arg Asp Ile Gly Asp Leu Phe Leu Asn Gly Gln Thr Cys Arg Ile
                405                 410                 415

Val Gln Arg Glu Leu Leu Phe Asp Leu Gly Val Ala Tyr Gly Ile Asp
            420                 425                 430

Cys Leu Leu Ile Asp Pro Thr Leu Gly Gly Arg Cys Asp Thr Phe Thr
        435                 440                 445

Thr Phe Asp Ala Ser Gly Glu Cys Gly Ser Cys Val Asn Thr Pro Ser
    450                 455                 460
```

```
Cys Pro Arg Trp Ser Lys Pro Lys Gly Val Lys Gln Lys Cys Leu Tyr
465                 470                 475                 480

Asn Leu Pro Phe Lys Arg Asn Leu Glu Gly Cys Arg Glu Arg Cys Ser
                485                 490                 495

Leu Val Ile Gln Ile Pro Arg Cys Cys Lys Gly Tyr Phe Gly Arg Asp
            500                 505                 510

Cys Gln Ala Cys Pro Gly Gly Pro Asp Ala Pro Cys Asn Asn Arg Gly
        515                 520                 525

Val Cys Leu Asp Gln Tyr Ser Ala Thr Gly Glu Cys Lys Cys Asn Thr
    530                 535                 540

Gly Phe Asn Gly Thr Ala Cys Glu Met Cys Trp Pro Gly Arg Phe Gly
545                 550                 555                 560

Pro Asp Cys Leu Pro Cys Gly Cys Ser Asp His Gly Gln Cys Asp Asp
                565                 570                 575

Gly Ile Thr Gly Ser Gly Gln Cys Leu Cys Glu Thr Gly Trp Thr Gly
            580                 585                 590

Pro Ser Cys Asp Thr Gln Ala Val Leu Pro Ala Val Cys Thr Pro Pro
        595                 600                 605

Cys Ser Ala His Ala Thr Cys Lys Glu Asn Asn Thr Cys Glu Cys Asn
    610                 615                 620

Leu Asp Tyr Glu Gly Asp Gly Ile Thr Cys Thr Val Val Asp Phe Cys
625                 630                 635                 640

Lys Gln Asp Asn Gly Gly Cys Ala Lys Val Ala Arg Cys Ser Gln Lys
                645                 650                 655

Gly Thr Lys Val Ser Cys Ser Cys Gln Lys Gly Tyr Lys Gly Asp Gly
            660                 665                 670

His Ser Cys Thr Glu Ile Asp Pro Cys Ala Asp Gly Leu Asn Gly Gly
        675                 680                 685

Cys His Glu His Ala Thr Cys Lys Met Thr Gly Pro Gly Lys His Lys
    690                 695                 700

Cys Glu Cys Lys Ser His Tyr Val Gly Asp Gly Leu Asn Cys Glu Pro
705                 710                 715                 720

Glu Gln Leu Pro Ile Asp Arg Cys Leu Gln Asp Asn Gly Gln Cys His
                725                 730                 735

Ala Asp Ala Lys Cys Val Asp Leu His Phe Gln Asp Thr Thr Val Gly
            740                 745                 750

Val Phe His Leu Arg Ser Pro Leu Gly Gln Tyr Lys Leu Thr Phe Asp
        755                 760                 765

Lys Ala Arg Glu Ala Cys Ala Asn Glu Ala Ala Thr Met Ala Thr Tyr
    770                 775                 780

Asn Gln Leu Ser Tyr Ala Gln Lys Ala Lys Tyr His Leu Cys Ser Ala
785                 790                 795                 800
```

```
Gly Trp Leu Glu Thr Gly Arg Val Ala Tyr Pro Thr Ala Phe Ala Ser
                805                 810                 815

Gln Asn Cys Gly Ser Gly Val Val Gly Ile Val Asp Tyr Gly Pro Arg
            820                 825                 830

Pro Asn Lys Ser Glu Met Trp Asp Val Phe Cys Tyr Arg Met Lys Gly
        835                 840                 845

Ser Ala Gly Leu Phe Gln Gln Leu Ser Ser Arg Pro Cys Ile Ser Arg
    850                 855                 860

Thr Pro Asp Asp Leu Ser Ile Arg Gly Thr Leu Phe Val Pro Gln Asn
865                 870                 875                 880

Ser Gly Leu Gly Glu Asn Glu Thr Leu Ser Gly Arg Asp Ile Glu His
                885                 890                 895

His Leu Ala Asn Val Ser Met Phe Phe Tyr Asn Asp Leu Val Asn Gly
            900                 905                 910

Thr Thr Leu Gln Thr Arg Leu Gly Ser Lys Leu Leu Ile Thr Ala Ser
        915                 920                 925

Gln Asp Pro Leu Gln Pro Thr Glu Thr Arg Phe Val Asp Gly Arg Ala
    930                 935                 940

Ile Leu Gln Trp Asp Ile Phe Ala Ser Asn Gly Ile Ile His Val Ile
945                 950                 955                 960

Ser Arg Pro Leu Lys Ala Pro Pro Ala Pro Val Thr Leu Thr His Thr
                965                 970                 975

Gly Leu Gly Ala Gly Ile Phe Phe Ala Ile Ile Leu Val Thr Gly Ala
            980                 985                 990

Val Ala Leu Ala Ala Tyr Ser Tyr Phe Arg Ile Asn Arg Arg Thr Ile
        995                1000                1005

Gly Phe Gln His Phe Glu Ser Glu Glu Asp Ile Asn Val Ala Ala Leu
   1010                1015                1020

Gly Lys Gln Gln Pro Glu Asn Ile Ser Asn Pro Leu Tyr Glu Ser Thr
1025                1030                1035                1040

Thr Ser Ala Pro Pro Glu Pro Ser Tyr Asp Pro Phe Thr Asp Ser Glu
                1045                1050                1055

Glu Arg Gln Leu Glu Gly Asn Asp Pro Leu Arg Thr Leu
            1060                1065


<210> 40
<211> 1192
<212> PRT
<213> Homo sapiens

<400> 40
Trp His Leu Phe Gly Trp Ser Asp Gly Thr Gly Val Cys Glu Cys Gly
  1               5                  10                  15

Glu Gly Phe Ser Gly Thr Ala Cys Glu Thr Cys Thr Glu Gly Lys Tyr
             20                  25                  30
```

```
Gly Ile His Cys Asp Gln Ala Cys Ser Cys Val His Gly Arg Cys Asn
         35                  40                  45

Gln Gly Pro Leu Gly Asp Gly Ser Cys Asp Cys Asp Val Gly Trp Arg
     50                  55                  60

Gly Val His Cys Asp Asn Ala Thr Thr Glu Asp Asn Cys Asn Gly Thr
 65                  70                  75                  80

Cys His Thr Ser Ala Asn Cys Leu Thr Asn Ser Asp Gly Thr Ala Ser
                 85                  90                  95

Cys Lys Cys Ala Ala Gly Phe Gln Gly Asn Gly Thr Ile Cys Thr Ala
            100                 105                 110

Ile Asn Ala Cys Glu Ile Ser Asn Gly Gly Cys Ser Ala Lys Ala Asp
        115                 120                 125

Cys Lys Arg Thr Thr Pro Gly Arg Arg Val Cys Thr Cys Lys Ala Gly
    130                 135                 140

Tyr Thr Gly Asp Gly Ile Val Cys Leu Glu Ile Asn Pro Cys Leu Glu
145                 150                 155                 160

Asn His Gly Gly Cys Asp Lys Asn Ala Glu Cys Thr Gln Thr Gly Pro
                165                 170                 175

Asn Gln Ala Ala Cys Asn Cys Leu Pro Ala Tyr Thr Gly Asp Gly Lys
            180                 185                 190

Val Cys Thr Leu Ile Asn Val Cys Leu Thr Lys Asn Gly Gly Cys Ser
        195                 200                 205

Glu Phe Ala Ile Cys Asn His Thr Gly Gln Val Glu Arg Thr Cys Thr
    210                 215                 220

Cys Lys Pro Asn Tyr Ile Gly Asp Gly Phe Thr Cys Arg Gly Ser Ile
225                 230                 235                 240

Tyr Gln Glu Leu Pro Lys Asn Pro Lys Thr Ser Gln Tyr Phe Phe Gln
                245                 250                 255

Leu Gln Glu His Phe Val Lys Asp Leu Val Gly Pro Gly Pro Phe Thr
            260                 265                 270

Val Phe Ala Pro Leu Ser Ala Ala Phe Asp Glu Glu Ala Arg Val Lys
        275                 280                 285

Asp Trp Asp Lys Tyr Gly Leu Met Pro Gln Val Leu Arg Tyr His Val
    290                 295                 300

Val Ala Cys His Gln Leu Leu Leu Glu Asn Leu Lys Leu Ile Ser Asn
305                 310                 315                 320

Ala Thr Ser Leu Gln Gly Glu Pro Ile Val Ile Ser Val Ser Gln Ser
                325                 330                 335

Thr Val Tyr Ile Asn Asn Lys Ala Lys Ile Ile Ser Ser Asp Ile Ile
            340                 345                 350

Ser Thr Asn Gly Ile Val His Ile Ile Asp Lys Leu Leu Ser Pro Lys
        355                 360                 365
```

```
Asn Leu Leu Ile Thr Pro Lys Asp Asn Ser Gly Arg Ile Leu Gln Asn
    370                 375                 380

Leu Thr Thr Leu Ala Thr Asn Asn Gly Tyr Ile Lys Phe Ser Asn Leu
385                 390                 395                 400

Ile Gln Asp Ser Gly Leu Leu Ser Val Ile Thr Asp Pro Ile His Thr
                405                 410                 415

Pro Val Thr Leu Phe Trp Pro Thr Asp Gln Ala Leu His Ala Leu Pro
            420                 425                 430

Ala Glu Gln Gln Asp Phe Leu Phe Asn Gln Asp Asn Lys Asp Lys Leu
        435                 440                 445

Lys Glu Tyr Leu Lys Phe His Val Ile Arg Asp Ala Lys Val Leu Ala
    450                 455                 460

Val Asp Leu Pro Thr Ser Thr Ala Trp Lys Thr Leu Gln Gly Ser Glu
465                 470                 475                 480

Leu Ser Val Lys Cys Gly Ala Gly Arg Asp Ile Gly Asp Leu Phe Leu
                485                 490                 495

Asn Gly Gln Thr Cys Arg Ile Val Gln Arg Glu Leu Leu Phe Asp Leu
            500                 505                 510

Gly Val Ala Tyr Gly Ile Asp Cys Leu Leu Ile Asp Pro Thr Leu Gly
        515                 520                 525

Gly Arg Cys Asp Thr Phe Thr Thr Phe Asp Ala Ser Gly Glu Cys Gly
    530                 535                 540

Ser Cys Val Asn Thr Pro Ser Cys Pro Arg Trp Ser Lys Pro Lys Gly
545                 550                 555                 560

Val Lys Gln Lys Cys Leu Tyr Asn Leu Pro Phe Lys Arg Asn Leu Glu
                565                 570                 575

Gly Cys Arg Glu Arg Cys Ser Leu Val Ile Gln Ile Pro Arg Cys Cys
            580                 585                 590

Lys Gly Tyr Phe Gly Arg Asp Cys Gln Ala Cys Pro Gly Gly Pro Asp
        595                 600                 605

Ala Pro Cys Asn Asn Arg Gly Val Cys Leu Asp Gln Tyr Ser Ala Thr
    610                 615                 620

Gly Glu Cys Lys Cys Asn Thr Gly Phe Asn Gly Thr Ala Cys Glu Met
625                 630                 635                 640

Cys Trp Pro Gly Arg Phe Gly Pro Asp Cys Leu Pro Cys Gly Cys Ser
                645                 650                 655

Asp His Gly Gln Cys Asp Asp Gly Ile Thr Gly Ser Gly Gln Cys Leu
            660                 665                 670

Cys Glu Thr Gly Trp Thr Gly Pro Ser Cys Asp Thr Gln Ala Val Leu
        675                 680                 685

Pro Ala Val Cys Thr Pro Pro Cys Ser Ala His Ala Thr Cys Lys Glu
    690                 695                 700
```

```
Asn Asn Thr Cys Glu Cys Asn Leu Asp Tyr Glu Gly Asp Gly Ile Thr
705                 710                 715                 720

Cys Thr Val Val Asp Phe Cys Lys Gln Asp Asn Gly Gly Cys Ala Lys
                725                 730                 735

Val Ala Arg Cys Ser Gln Lys Gly Thr Lys Val Ser Cys Ser Cys Gln
            740                 745                 750

Lys Gly Tyr Lys Gly Asp Gly His Ser Cys Thr Glu Ile Asp Pro Cys
        755                 760                 765

Ala Asp Gly Leu Asn Gly Gly Cys His Glu His Ala Thr Cys Lys Met
    770                 775                 780

Thr Gly Pro Gly Lys His Lys Cys Glu Cys Lys Ser His Tyr Val Gly
785                 790                 795                 800

Asp Gly Leu Asn Cys Glu Pro Glu Gln Leu Pro Ile Asp Arg Cys Leu
                805                 810                 815

Gln Asp Asn Gly Gln Cys His Ala Asp Ala Lys Cys Val Asp Leu His
            820                 825                 830

Phe Gln Asp Thr Thr Val Gly Val Phe His Leu Arg Ser Pro Leu Gly
        835                 840                 845

Gln Tyr Lys Leu Thr Phe Asp Lys Ala Arg Glu Ala Cys Ala Asn Glu
    850                 855                 860

Ala Ala Thr Met Ala Thr Tyr Asn Gln Leu Ser Tyr Ala Gln Lys Ala
865                 870                 875                 880

Lys Tyr His Leu Cys Ser Ala Gly Trp Leu Glu Thr Gly Arg Val Ala
                885                 890                 895

Tyr Pro Thr Ala Phe Ala Ser Gln Asn Cys Gly Ser Gly Val Val Gly
            900                 905                 910

Ile Val Asp Tyr Gly Pro Arg Pro Asn Lys Ser Glu Met Trp Asp Val
        915                 920                 925

Phe Cys Tyr Arg Met Lys Asp Val Asn Cys Thr Cys Lys Val Gly Tyr
    930                 935                 940

Val Gly Asp Gly Phe Ser Cys Ser Gly Asn Leu Leu Gln Val Leu Met
945                 950                 955                 960

Ser Phe Pro Ser Leu Thr Asn Phe Leu Thr Glu Val Leu Ala Tyr Ser
                965                 970                 975

Asn Ser Ser Ala Arg Gly Arg Ala Phe Leu Glu His Leu Thr Asp Leu
            980                 985                 990

Ser Ile Arg Gly Thr Leu Phe Val Pro Gln Asn Ser Gly Leu Gly Glu
        995                1000                1005

Asn Glu Thr Leu Ser Gly Arg Asp Ile Glu His His Leu Ala Asn Val
   1010                1015                1020

Ser Met Phe Phe Tyr Asn Asp Leu Val Asn Gly Thr Thr Leu Gln Thr
1025                1030                1035                1040
```

```
Arg Leu Gly Ser Lys Leu Leu Ile Thr Ala Ser Gln Asp Pro Leu Gln
                1045                1050                1055

Pro Thr Glu Thr Arg Phe Val Asp Gly Arg Ala Ile Leu Gln Trp Asp
            1060                1065                1070

Ile Phe Ala Ser Asn Gly Ile Ile His Val Ile Ser Arg Pro Leu Lys
        1075                1080                1085

Ala Pro Pro Ala Pro Val Thr Leu Thr His Thr Gly Leu Gly Ala Gly
    1090                1095                1100

Ile Phe Phe Ala Ile Ile Leu Val Thr Gly Ala Val Ala Leu Ala Ala
1105                1110                1115                1120

Tyr Ser Tyr Phe Arg Ile Asn Arg Arg Thr Ile Gly Phe Gln His Phe
                1125                1130                1135

Glu Ser Glu Glu Asp Ile Asn Val Ala Ala Leu Gly Lys Gln Gln Pro
            1140                1145                1150

Glu Asn Ile Ser Asn Pro Leu Tyr Glu Ser Thr Thr Ser Ala Pro Pro
        1155                1160                1165

Glu Pro Ser Tyr Asp Pro Phe Thr Asp Ser Glu Glu Arg Gln Leu Glu
    1170                1175                1180

Gly Asn Asp Pro Leu Arg Thr Leu
1185                1190


<210> 41
<211> 897
<212> PRT
<213> Homo sapiens

<400> 41
Met Pro Gln Val Leu Arg Tyr His Val Val Ala Cys His Gln Leu Leu
  1               5                  10                  15

Leu Glu Asn Leu Lys Leu Ile Ser Asn Ala Thr Ser Leu Gln Gly Glu
             20                  25                  30

Pro Ile Val Ile Ser Val Ser Gln Ser Thr Val Tyr Ile Asn Asn Lys
         35                  40                  45

Ala Lys Ile Ile Ser Ser Asp Ile Ile Ser Thr Asn Gly Ile Val His
     50                  55                  60

Ile Ile Asp Lys Leu Leu Ser Pro Lys Asn Leu Leu Ile Thr Pro Lys
 65                  70                  75                  80

Asp Asn Ser Gly Arg Ile Leu Gln Asn Leu Thr Thr Leu Ala Thr Asn
                 85                  90                  95

Asn Gly Tyr Ile Lys Phe Ser Asn Leu Ile Gln Asp Ser Gly Leu Leu
            100                 105                 110

Ser Val Ile Thr Asp Pro Ile His Thr Pro Val Thr Leu Phe Trp Pro
        115                 120                 125

Thr Asp Gln Ala Leu His Ala Leu Pro Ala Glu Gln Gln Asp Phe Leu
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    130                 135                 140

Phe Asn Gln Asp Asn Lys Asp Lys Leu Lys Glu Tyr Leu Lys Phe His
145                 150                 155                 160

Val Ile Arg Asp Ala Lys Val Leu Ala Val Asp Leu Pro Thr Ser Thr
                165                 170                 175

Ala Trp Lys Thr Leu Gln Gly Ser Glu Leu Ser Val Lys Cys Gly Ala
            180                 185                 190

Gly Arg Asp Ile Gly Asp Leu Phe Leu Asn Gly Gln Thr Cys Arg Ile
        195                 200                 205

Val Gln Arg Glu Leu Leu Phe Asp Leu Gly Val Ala Tyr Gly Ile Asp
    210                 215                 220

Cys Leu Leu Ile Asp Pro Thr Leu Gly Gly Arg Cys Asp Thr Phe Thr
225                 230                 235                 240

Thr Phe Asp Ala Ser Gly Glu Cys Gly Ser Cys Val Asn Thr Pro Ser
                245                 250                 255

Cys Pro Arg Trp Ser Lys Pro Lys Gly Val Lys Gln Lys Cys Leu Tyr
            260                 265                 270

Asn Leu Pro Phe Lys Arg Asn Leu Glu Gly Cys Arg Glu Arg Cys Ser
        275                 280                 285

Leu Val Ile Gln Ile Pro Arg Cys Cys Lys Gly Tyr Phe Gly Arg Asp
    290                 295                 300

Cys Gln Ala Cys Pro Gly Gly Pro Asp Ala Pro Cys Asn Asn Arg Gly
305                 310                 315                 320

Val Cys Leu Asp Gln Tyr Ser Ala Thr Gly Glu Cys Lys Cys Asn Thr
                325                 330                 335

Gly Phe Asn Gly Thr Ala Cys Glu Met Cys Trp Pro Gly Arg Phe Gly
            340                 345                 350

Pro Asp Cys Leu Pro Cys Gly Cys Ser Asp His Gly Gln Cys Asp Asp
        355                 360                 365

Gly Ile Thr Gly Ser Gly Gln Cys Leu Cys Glu Thr Gly Trp Thr Gly
    370                 375                 380

Pro Ser Cys Asp Thr Gln Ala Val Leu Pro Ala Val Cys Thr Pro Pro
385                 390                 395                 400

Cys Ser Ala His Ala Thr Cys Lys Glu Asn Asn Thr Cys Glu Cys Asn
                405                 410                 415

Leu Asp Tyr Glu Gly Asp Gly Ile Thr Cys Thr Val Val Asp Phe Cys
            420                 425                 430

Lys Gln Asp Asn Gly Gly Cys Ala Lys Val Ala Arg Cys Ser Gln Lys
        435                 440                 445

Gly Thr Lys Val Ser Cys Ser Cys Gln Lys Gly Tyr Lys Gly Asp Gly
    450                 455                 460

His Ser Cys Thr Glu Ile Asp Pro Cys Ala Asp Gly Leu Asn Gly Gly
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465                 470                 475                 480

Cys His Glu His Ala Thr Cys Lys Met Thr Gly Pro Gly Lys His Lys
                485                 490                 495

Cys Glu Cys Lys Ser His Tyr Val Gly Asp Gly Leu Asn Cys Glu Pro
            500                 505                 510

Glu Gln Leu Pro Ile Asp Arg Cys Leu Gln Asp Asn Gly Gln Cys His
        515                 520                 525

Ala Asp Ala Lys Cys Val Asp Leu His Phe Gln Asp Thr Thr Val Gly
    530                 535                 540

Val Phe His Leu Arg Ser Pro Leu Gly Gln Tyr Lys Leu Thr Phe Asp
545                 550                 555                 560

Lys Ala Arg Glu Ala Cys Ala Asn Glu Ala Ala Thr Met Ala Thr Tyr
                565                 570                 575

Asn Gln Leu Ser Tyr Ala Gln Lys Ala Lys Tyr His Leu Cys Ser Ala
            580                 585                 590

Gly Trp Leu Glu Thr Gly Arg Val Ala Tyr Pro Thr Ala Phe Ala Ser
        595                 600                 605

Gln Asn Cys Gly Ser Gly Val Val Gly Ile Val Asp Tyr Gly Pro Arg
    610                 615                 620

Pro Asn Lys Ser Glu Met Trp Asp Val Phe Cys Tyr Arg Met Lys Asp
625                 630                 635                 640

Val Asn Cys Thr Cys Lys Val Gly Tyr Val Gly Asp Gly Phe Ser Cys
                645                 650                 655

Ser Gly Asn Leu Leu Gln Val Leu Met Ser Phe Pro Ser Leu Thr Asn
            660                 665                 670

Phe Leu Thr Glu Val Leu Ala Tyr Ser Asn Ser Ser Ala Arg Gly Arg
        675                 680                 685

Ala Phe Leu Glu His Leu Thr Asp Leu Ser Ile Arg Gly Thr Leu Phe
    690                 695                 700

Val Pro Gln Asn Ser Gly Leu Gly Glu Asn Glu Thr Leu Ser Gly Arg
705                 710                 715                 720

Asp Ile Glu His His Leu Ala Asn Val Ser Met Phe Phe Tyr Asn Asp
                725                 730                 735

Leu Val Asn Gly Thr Thr Leu Gln Thr Arg Val Gly Ser Lys Leu Leu
            740                 745                 750

Ile Thr Ala Ser Gln Asp Pro Leu Gln Pro Thr Glu Thr Arg Phe Val
        755                 760                 765

Asp Gly Arg Ala Ile Leu Gln Trp Asp Ile Phe Ala Ser Asn Gly Ile
    770                 775                 780

Ile His Val Ile Ser Arg Pro Leu Lys Ala Pro Pro Ala Pro Val Thr
785                 790                 795                 800

Leu Thr His Thr Gly Leu Gly Ala Gly Ile Phe Phe Ala Ile Ile Leu
```

805 810 815

Val Thr Gly Ala Val Ala Leu Ala Ala Tyr Ser Tyr Phe Arg Ile Asn
820 825 830

Arg Arg Thr Ile Gly Phe Gln His Phe Glu Ser Glu Glu Asp Ile Asn
835 840 845

Val Ala Ala Leu Gly Lys Gln Gln Pro Glu Asn Ile Ser Asn Pro Leu
850 855 860

Tyr Glu Ser Thr Thr Ser Ala Pro Pro Glu Pro Ser Tyr Asp Pro Phe
865 870 875 880

Thr Asp Ser Glu Glu Arg Gln Leu Glu Gly Asn Asp Pro Leu Arg Thr
885 890 895

Leu

<210> 42
<211> 2570
<212> PRT
<213> Homo sapiens

<400> 42
Met Ala Gly Pro Arg Gly Leu Leu Pro Leu Cys Leu Leu Ala Phe Cys
1 5 10 15

Leu Ala Gly Phe Ser Phe Val Arg Gly Gln Val Leu Phe Lys Gly Cys
20 25 30

Asp Val Lys Thr Thr Phe Val Thr His Val Pro Cys Thr Ser Cys Ala
35 40 45

Ala Ile Lys Lys Gln Thr Cys Pro Ser Gly Trp Leu Arg Glu Leu Pro
50 55 60

Asp Gln Ile Thr Gln Asp Cys Arg Tyr Glu Val Gln Leu Gly Gly Ser
65 70 75 80

Met Val Ser Met Ser Gly Cys Arg Arg Lys Cys Arg Lys Gln Val Val
85 90 95

Gln Lys Ala Cys Cys Pro Gly Tyr Trp Gly Ser Arg Cys His Glu Cys
100 105 110

Pro Gly Gly Ala Glu Thr Pro Cys Asn Gly His Gly Thr Cys Leu Asp
115 120 125

Gly Met Asp Arg Asn Gly Thr Cys Val Cys Gln Glu Asn Phe Arg Gly
130 135 140

Ser Ala Cys Gln Glu Cys Gln Asp Pro Asn Arg Phe Gly Pro Asp Cys
145 150 155 160

Gln Ser Val Cys Ser Cys Val His Gly Val Cys Asn His Gly Pro Arg
165 170 175

Gly Asp Gly Ser Cys Leu Cys Phe Ala Gly Tyr Thr Gly Pro His Cys
180 185 190

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Asp Gln Glu Leu Pro Val Cys Gln Glu Leu Arg Cys Pro Gln Asn Thr
        195                 200                 205

Gln Cys Ser Ala Glu Ala Pro Ser Cys Arg Cys Leu Pro Gly Tyr Thr
    210                 215                 220

Gln Gln Gly Ser Glu Cys Arg Ala Pro Asn Pro Cys Trp Pro Ser Pro
225                 230                 235                 240

Cys Ser Leu Leu Ala Gln Cys Ser Val Ser Pro Lys Gly Gln Ala Gln
                245                 250                 255

Cys His Cys Pro Glu Asn Tyr His Gly Asp Gly Met Val Cys Leu Pro
            260                 265                 270

Lys Asp Pro Cys Thr Asp Asn Leu Gly Gly Cys Pro Ser Asn Ser Thr
        275                 280                 285

Leu Cys Val Tyr Gln Lys Pro Gly Gln Ala Phe Cys Thr Cys Arg Pro
    290                 295                 300

Gly Leu Val Ser Ile Asn Ser Asn Ala Ser Ala Gly Cys Phe Ala Phe
305                 310                 315                 320

Cys Ser Pro Phe Ser Cys Asp Arg Ser Ala Thr Cys Gln Val Thr Ala
                325                 330                 335

Asp Gly Lys Thr Ser Cys Val Cys Arg Glu Ser Glu Val Gly Asp Gly
            340                 345                 350

Arg Ala Cys Tyr Gly His Leu Leu His Glu Val Gln Lys Ala Thr Gln
        355                 360                 365

Thr Gly Arg Val Phe Leu Gln Leu Arg Val Ala Val Ala Met Met Asp
    370                 375                 380

Gln Gly Cys Arg Glu Ile Leu Thr Thr Ala Gly Pro Phe Thr Val Leu
385                 390                 395                 400

Val Pro Ser Val Ser Ser Phe Ser Ser Arg Thr Met Asn Ala Ser Leu
                405                 410                 415

Ala Gln Gln Leu Cys Arg Gln His Ile Ile Ala Gly Gln His Ile Leu
            420                 425                 430

Glu Asp Thr Arg Thr Gln Gln Thr Arg Arg Trp Trp Thr Leu Ala Gly
        435                 440                 445

Gln Glu Ile Thr Val Thr Phe Asn Gln Phe Thr Lys Tyr Ser Tyr Lys
    450                 455                 460

Tyr Lys Asp Gln Pro Gln Gln Thr Phe Asn Ile Tyr Lys Ala Asn Asn
465                 470                 475                 480

Ile Ala Ala Asn Gly Val Phe His Val Val Thr Gly Leu Arg Trp Gln
                485                 490                 495

Ala Pro Ser Gly Thr Pro Gly Asp Pro Lys Arg Thr Ile Gly Gln Ile
            500                 505                 510

Leu Ala Ser Thr Glu Ala Phe Ser Arg Phe Glu Thr Ile Leu Glu Asn
        515                 520                 525
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Cys Gly Leu Pro Ser Ile Leu Asp Gly Pro Gly Pro Phe Thr Val Phe
    530                 535                 540

Ala Pro Ser Asn Glu Ala Val Asp Ser Leu Arg Asp Gly Arg Leu Ile
545                 550                 555                 560

Tyr Leu Phe Thr Ala Gly Leu Ser Lys Leu Gln Glu Leu Val Arg Tyr
                565                 570                 575

His Ile Tyr Asn His Gly Gln Leu Thr Val Glu Lys Leu Ile Ser Lys
            580                 585                 590

Gly Arg Ile Leu Thr Met Ala Asn Gln Val Leu Ala Val Asn Ile Ser
        595                 600                 605

Glu Glu Gly Arg Ile Leu Leu Gly Pro Glu Gly Val Pro Leu Gln Arg
    610                 615                 620

Val Asp Val Met Ala Ala Asn Gly Val Ile His Met Leu Asp Gly Ile
625                 630                 635                 640

Leu Leu Pro Pro Thr Ile Leu Pro Ile Leu Pro Lys His Cys Ser Glu
                645                 650                 655

Glu Gln His Lys Ile Val Ala Gly Ser Cys Val Asp Cys Gln Ala Leu
            660                 665                 670

Asn Thr Ser Thr Cys Pro Pro Asn Ser Val Lys Leu Asp Ile Phe Pro
        675                 680                 685

Lys Glu Cys Val Tyr Ile His Asp Pro Thr Gly Leu Asn Val Leu Lys
    690                 695                 700

Lys Gly Cys Ala Ser Tyr Cys Asn Gln Thr Ile Met Glu Gln Gly Cys
705                 710                 715                 720

Cys Lys Gly Phe Phe Gly Pro Asp Cys Thr Gln Cys Pro Gly Gly Phe
                725                 730                 735

Ser Asn Pro Cys Tyr Gly Lys Gly Asn Cys Ser Asp Gly Ile Gln Gly
            740                 745                 750

Asn Gly Ala Cys Leu Cys Phe Pro Asp Tyr Lys Gly Ile Ala Cys His
        755                 760                 765

Ile Cys Ser Asn Pro Asn Lys His Gly Glu Gln Cys Gln Glu Asp Cys
    770                 775                 780

Gly Cys Val His Gly Leu Cys Asp Asn Arg Pro Gly Ser Gly Gly Val
785                 790                 795                 800

Cys Gln Gln Gly Thr Cys Ala Pro Gly Phe Ser Gly Arg Phe Cys Asn
                805                 810                 815

Glu Ser Met Gly Asp Cys Gly Pro Thr Gly Leu Ala Gln His Cys His
            820                 825                 830

Leu His Ala Arg Cys Val Ser Gln Glu Gly Val Ala Arg Cys Arg Cys
        835                 840                 845

Leu Asp Gly Phe Glu Gly Asp Gly Phe Ser Cys Thr Pro Ser Asn Pro
    850                 855                 860
```

```
Cys Ser His Pro Asp Arg Gly Gly Cys Ser Glu Asn Ala Glu Cys Val
865                 870                 875                 880

Pro Gly Ser Leu Gly Thr His His Cys Thr Cys His Lys Gly Trp Ser
                885                 890                 895

Gly Asp Gly Arg Val Cys Val Ala Ile Asp Glu Cys Glu Leu Asp Val
            900                 905                 910

Gly Gly Gly Cys His Thr Asp Ala Leu Cys Ser Tyr Val Gly Pro Gly
        915                 920                 925

Gln Ser Arg Cys Thr Cys Lys Leu Gly Phe Ala Gly Asp Gly Tyr Gln
    930                 935                 940

Cys Ser Pro Ile Asp Pro Cys Arg Ala Gly Asn Gly Gly Cys His Gly
945                 950                 955                 960

Leu Ala Thr Cys Arg Ala Val Gly Gly Gly Gln Arg Val Cys Thr Cys
                965                 970                 975

Pro Pro Gly Phe Gly Gly Asp Gly Phe Ser Cys Tyr Gly Asp Ile Phe
            980                 985                 990

Arg Glu Leu Glu Ala Asn Ala His Phe Ser Ile Phe Tyr Gln Trp Leu
        995                1000                1005

Lys Ser Ala Gly Ile Thr Leu Pro Ala Asp Arg Arg Val Thr Ala Leu
   1010                1015                1020

Val Pro Ser Glu Ala Ala Val Arg Gln Leu Ser Pro Glu Asp Arg Ala
1025                1030                1035                1040

Phe Trp Leu Gln Pro Arg Thr Leu Pro Asn Leu Val Arg Ala His Phe
                1045                1050                1055

Leu Gln Gly Ala Leu Phe Glu Glu Glu Leu Ala Arg Leu Gly Gly Gln
            1060                1065                1070

Glu Val Ala Thr Leu Asn Pro Thr Thr Arg Trp Glu Ile Arg Asn Ile
        1075                1080                1085

Ser Gly Arg Val Trp Val Gln Asn Ala Ser Val Asp Val Ala Asp Leu
   1090                1095                1100

Leu Ala Thr Asn Gly Val Leu His Ile Leu Ser Gln Val Leu Leu Pro
1105                1110                1115                1120

Pro Arg Gly Asp Val Pro Gly Gly Gln Gly Leu Leu Gln Gln Leu Asp
                1125                1130                1135

Leu Val Pro Ala Phe Ser Leu Phe Arg Glu Leu Leu Gln His His Gly
            1140                1145                1150

Leu Val Pro Gln Ile Glu Ala Ala Thr Ala Tyr Thr Ile Phe Val Pro
        1155                1160                1165

Thr Asn Arg Ser Leu Glu Ala Gln Gly Asn Ser Ser His Leu Asp Ala
   1170                1175                1180

Asp Thr Val Arg His His Val Val Leu Gly Glu Ala Leu Ser Met Glu
1185                1190                1195                1200
```

```
Thr Leu Arg Lys Gly Gly His Arg Asn Ser Leu Leu Gly Pro Ala His
                1205                1210                1215

Trp Ile Val Phe Tyr Asn His Ser Gly Gln Pro Glu Val Asn His Val
            1220                1225                1230

Pro Leu Glu Gly Pro Met Leu Glu Ala Pro Gly Arg Ser Leu Ile Gly
        1235                1240                1245

Leu Ser Gly Val Leu Thr Val Gly Ser Ser Arg Cys Leu His Ser His
    1250                1255                1260

Ala Glu Ala Leu Arg Glu Lys Cys Val Asn Cys Thr Arg Arg Phe Arg
1265                1270                1275                1280

Cys Thr Gln Gly Phe Gln Leu Gln Asp Thr Pro Arg Lys Ser Cys Val
                1285                1290                1295

Tyr Arg Ser Gly Phe Ser Phe Ser Arg Gly Cys Ser Tyr Thr Cys Ala
            1300                1305                1310

Lys Lys Ile Gln Val Pro Asp Cys Cys Pro Gly Phe Phe Gly Thr Leu
        1315                1320                1325

Cys Glu Pro Cys Pro Gly Gly Leu Gly Gly Val Cys Ser Gly His Gly
    1330                1335                1340

Gln Cys Gln Asp Arg Phe Leu Gly Ser Gly Glu Cys His Cys His Glu
1345                1350                1355                1360

Gly Phe His Gly Thr Ala Cys Glu Val Cys Glu Leu Gly Arg Tyr Gly
                1365                1370                1375

Pro Asn Cys Thr Gly Val Cys Asp Cys Ala His Gly Leu Cys Gln Glu
            1380                1385                1390

Gly Leu Gln Gly Asp Gly Ser Cys Val Cys Asn Val Gly Trp Gln Gly
        1395                1400                1405

Leu Arg Cys Asp Gln Lys Ile Thr Ser Pro Gln Cys Pro Arg Lys Cys
    1410                1415                1420

Asp Pro Asn Ala Asn Cys Val Gln Asp Ser Ala Gly Ala Ser Thr Cys
1425                1430                1435                1440

Ala Cys Ala Ala Gly Tyr Ser Gly Asn Gly Ile Phe Cys Ser Glu Val
                1445                1450                1455

Asp Pro Cys Ala His Gly His Gly Gly Cys Ser Pro His Ala Asn Cys
            1460                1465                1470

Thr Lys Val Ala Pro Gly Gln Arg Thr Cys Thr Cys Gln Asp Gly Tyr
        1475                1480                1485

Met Gly Asp Gly Glu Leu Cys Gln Glu Ile Asn Ser Cys Leu Ile His
    1490                1495                1500

His Gly Gly Cys His Ile His Ala Glu Cys Ile Pro Thr Gly Pro Gln
1505                1510                1515                1520

Gln Val Ser Cys Ser Cys Arg Glu Gly Tyr Ser Gly Asp Gly Ile Arg
                1525                1530                1535
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Thr Cys Glu Leu Leu Asp Pro Cys Ser Lys Asn Asn Gly Gly Cys Ser
          1540                1545                1550

Pro Tyr Ala Thr Cys Lys Ser Thr Gly Asp Gly Gln Arg Thr Cys Thr
       1555                1560                1565

Cys Asp Thr Ala His Thr Val Gly Asp Gly Leu Thr Cys Arg Ala Arg
   1570                1575                1580

Val Gly Leu Glu Leu Leu Arg Asp Lys His Ala Ser Phe Phe Ser Leu
1585                1590                1595                1600

Arg Leu Leu Glu Tyr Lys Glu Leu Lys Gly Asp Gly Pro Phe Thr Ile
               1605                1610                1615

Phe Val Pro His Ala Asp Leu Met Ser Asn Leu Ser Gln Asp Glu Leu
          1620                1625                1630

Ala Arg Ile Arg Ala His Arg Gln Leu Val Phe Arg Tyr His Val Val
       1635                1640                1645

Gly Cys Arg Arg Leu Arg Ser Glu Asp Leu Leu Glu Gln Gly Tyr Ala
   1650                1655                1660

Thr Ala Leu Ser Gly His Pro Leu Arg Phe Ser Glu Arg Glu Gly Ser
1665                1670                1675                1680

Ile Tyr Leu Asn Asp Phe Ala Arg Val Val Ser Ser Asp His Glu Ala
               1685                1690                1695

Val Asn Gly Ile Leu His Phe Ile Asp Arg Val Leu Leu Pro Pro Glu
          1700                1705                1710

Ala Leu His Trp Glu Pro Asp Asp Ala Pro Ile Pro Arg Arg Asn Val
       1715                1720                1725

Thr Ala Ala Ala Gln Gly Phe Gly Tyr Lys Ile Phe Ser Gly Leu Leu
   1730                1735                1740

Lys Val Ala Gly Leu Leu Pro Leu Leu Arg Glu Ala Ser His Arg Pro
1745                1750                1755                1760

Phe Thr Met Leu Trp Pro Thr Asp Ala Ala Phe Arg Ala Leu Pro Pro
               1765                1770                1775

Asp Arg Gln Ala Trp Leu Tyr His Glu Asp His Arg Asp Lys Leu Ala
          1780                1785                1790

Ala Ile Leu Arg Gly His Met Ile Arg Asn Val Glu Ala Leu Ala Ser
       1795                1800                1805

Asp Leu Pro Asn Leu Gly Pro Leu Arg Thr Met His Gly Thr Pro Ile
   1810                1815                1820

Ser Phe Ser Cys Ser Arg Thr Arg Pro Gly Glu Leu Met Val Gly Glu
1825                1830                1835                1840

Asp Asp Ala Arg Ile Val Gln Arg His Leu Pro Phe Glu Gly Gly Leu
               1845                1850                1855

Ala Tyr Gly Ile Asp Gln Leu Leu Glu Pro Pro Gly Leu Gly Ala Arg
          1860                1865                1870
```

```
Cys Asp His Phe Glu Thr Arg Pro Leu Arg Leu Asn Thr Cys Ser Ile
       1875                1880                1885

Cys Gly Leu Glu Pro Pro Cys Pro Glu Gly Ser Gln Glu Gln Gly Ser
   1890                1895                1900

Pro Glu Ala Cys Trp Arg Phe Tyr Pro Lys Phe Trp Thr Ser Pro Pro
1905                1910                1915                1920

Leu His Ser Leu Gly Leu Arg Ser Val Trp Val His Pro Ser Leu Trp
                1925                1930                1935

Gly Arg Pro Gln Gly Leu Gly Arg Gly Cys His Arg Asn Cys Val Thr
            1940                1945                1950

Thr Thr Trp Lys Pro Ser Cys Cys Pro Gly His Tyr Gly Ser Glu Cys
       1955                1960                1965

Gln Ala Cys Pro Gly Gly Pro Ser Ser Pro Cys Ser Asp Arg Gly Val
   1970                1975                1980

Cys Met Asp Gly Met Ser Gly Ser Gly Gln Cys Leu Cys Arg Ser Gly
1985                1990                1995                2000

Phe Ala Gly Thr Ala Cys Glu Leu Cys Ala Pro Gly Ala Phe Gly Pro
                2005                2010                2015

His Cys Gln Ala Cys Arg Cys Thr Val His Gly Arg Cys Asp Glu Gly
            2020                2025                2030

Leu Gly Gly Ser Gly Ser Cys Phe Cys Asp Glu Gly Trp Thr Gly Pro
       2035                2040                2045

Arg Cys Glu Val Gln Leu Glu Leu Gln Pro Val Cys Thr Pro Pro Cys
   2050                2055                2060

Ala Pro Glu Ala Val Cys Arg Ala Gly Asn Ser Cys Glu Cys Ser Leu
2065                2070                2075                2080

Gly Tyr Glu Gly Asp Gly Arg Val Cys Thr Val Ala Asp Leu Cys Gln
                2085                2090                2095

Asp Gly His Gly Gly Cys Ser Glu His Ala Asn Cys Ser Gln Val Gly
            2100                2105                2110

Thr Met Val Thr Cys Thr Cys Leu Pro Asp Tyr Glu Gly Asp Gly Trp
       2115                2120                2125

Ser Cys Arg Ala Arg Asn Pro Cys Thr Asp Gly His Arg Gly Gly Cys
   2130                2135                2140

Ser Glu His Ala Asn Cys Leu Ser Thr Gly Leu Asn Thr Arg Arg Cys
2145                2150                2155                2160

Glu Cys His Ala Gly Tyr Val Gly Asp Gly Leu Gln Cys Leu Glu Glu
                2165                2170                2175

Ser Glu Pro Pro Val Asp Arg Cys Leu Gly Gln Pro Pro Pro Cys His
            2180                2185                2190

Ser Asp Ala Met Cys Thr Asp Gln His Phe Gln Glu Lys Arg Ala Gly
       2195                2200                2205
```

```
Val Phe His Leu Gln Ala Thr Ser Gly Pro Tyr Gly Leu Asn Phe Ser
   2210                2215                2220

Glu Ala Glu Ala Ala Cys Glu Ala Gln Gly Ala Val Leu Ala Ser Phe
2225                2230                2235                2240

Pro Gln Leu Ser Ala Ala Gln Gln Leu Gly Phe His Leu Cys Leu Met
                2245                2250                2255

Gly Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val Phe Pro Val
            2260                2265                2270

Ala Asp Cys Gly Asn Gly Arg Val Gly Val Val Ser Leu Gly Ala Arg
        2275                2280                2285

Lys Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg Val Gln Asp
    2290                2295                2300

Val Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly Ile Ser Thr
2305                2310                2315                2320

Cys Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala Asn Phe Ser
                2325                2330                2335

Thr Phe Tyr Gly Met Leu Leu Gly Tyr Ala Asn Ala Thr Gln Arg Gly
            2340                2345                2350

Leu Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr Lys Thr Leu
        2355                2360                2365

Phe Val Pro Val Asn Glu Gly Phe Val Asp Asn Met Thr Leu Ser Gly
    2370                2375                2380

Pro Asp Leu Glu Leu His Ala Ser Asn Ala Thr Leu Leu Ser Ala Asn
2385                2390                2395                2400

Ala Ser Gln Gly Lys Leu Leu Pro Ala His Ser Gly Leu Ser Leu Ile
                2405                2410                2415

Ile Ser Asp Ala Gly Pro Asp Asn Ser Ser Trp Ala Pro Val Ala Pro
            2420                2425                2430

Gly Thr Val Val Val Ser Arg Ile Ile Val Trp Asp Ile Met Ala Phe
        2435                2440                2445

Asn Gly Ile Ile His Ala Leu Ala Ser Pro Leu Leu Ala Pro Pro Gln
    2450                2455                2460

Pro Gln Ala Val Leu Ala Pro Glu Ala Pro Pro Val Ala Ala Gly Val
2465                2470                2475                2480

Gly Ala Val Leu Ala Ala Gly Ala Leu Leu Gly Leu Val Ala Gly Ala
                2485                2490                2495

Leu Tyr Leu Arg Ala Arg Gly Lys Pro Thr Gly Phe Gly Phe Ser Ala
            2500                2505                2510

Phe Gln Ala Glu Asp Asp Ala Asp Asp Asp Phe Ser Pro Trp Gln Glu
        2515                2520                2525

Gly Thr Asn Pro Thr Leu Val Ser Val Pro Asn Pro Val Phe Gly Ser
    2530                2535                2540
```

```
Asp Thr Phe Cys Glu Pro Phe Asp Asp Ser Leu Leu Glu Glu Asp Phe
2545              2550                2555                2560

Pro Asp Thr Gln Arg Ile Leu Thr Val Lys
               2565                2570


<210> 43
<211> 2212
<212> PRT
<213> Homo sapiens

<400> 43
Cys Asp Arg Ser Ala Thr Cys Gln Val Thr Ala Asp Gly Lys Thr Ser
  1               5                  10                  15

Cys Val Cys Arg Glu Ser Glu Val Gly Asp Gly Arg Ala Cys Tyr Gly
             20                  25                  30

His Leu Leu His Glu Val Gln Lys Ala Thr Gln Thr Gly Arg Val Phe
         35                  40                  45

Leu Gln Leu Arg Val Ala Val Ala Met Met Asp Gln Gly Cys Arg Glu
     50                  55                  60

Ile Leu Thr Thr Ala Gly Pro Phe Thr Val Leu Val Pro Ser Val Ser
 65                  70                  75                  80

Ser Phe Ser Ser Arg Thr Met Asn Ala Ser Leu Ala Gln Gln Leu Cys
                 85                  90                  95

Arg Gln His Ile Ile Ala Gly Gln His Ile Leu Glu Asp Thr Arg Thr
            100                 105                 110

Gln Gln Thr Arg Arg Trp Trp Thr Leu Ala Gly Gln Glu Ile Thr Val
        115                 120                 125

Thr Phe Asn Gln Phe Thr Lys Tyr Ser Tyr Lys Tyr Lys Asp Gln Pro
    130                 135                 140

Gln Gln Thr Phe Asn Ile Tyr Lys Ala Asn Asn Ile Ala Ala Asn Gly
145                 150                 155                 160

Val Phe His Val Val Thr Gly Leu Arg Trp Gln Ala Pro Ser Gly Thr
                165                 170                 175

Pro Gly Asp Pro Lys Arg Thr Ile Gly Gln Ile Leu Ala Ser Thr Glu
            180                 185                 190

Ala Phe Ser Arg Phe Glu Thr Ile Leu Glu Asn Cys Gly Leu Pro Ser
        195                 200                 205

Ile Leu Asp Gly Pro Gly Pro Phe Thr Val Phe Ala Pro Ser Asn Glu
    210                 215                 220

Ala Val Asp Ser Leu Arg Asp Gly Arg Leu Ile Tyr Leu Phe Thr Ala
225                 230                 235                 240

Gly Leu Ser Lys Leu Gln Glu Leu Val Arg Tyr His Ile Tyr Asn His
                245                 250                 255

Gly Gln Leu Thr Val Glu Lys Leu Ile Ser Lys Gly Arg Ile Leu Thr
            260                 265                 270
```

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Met Ala Asn Gln Val Leu Ala Val Asn Ile Ser Glu Glu Gly Arg Ile
        275                 280                 285

Leu Leu Gly Pro Glu Gly Val Pro Leu Gln Arg Val Asp Val Met Ala
    290                 295                 300

Ala Asn Gly Val Ile His Met Leu Asp Gly Ile Leu Leu Pro Pro Thr
305                 310                 315                 320

Ile Leu Pro Ile Leu Pro Lys His Cys Ser Glu Glu Gln His Lys Ile
                325                 330                 335

Val Ala Gly Ser Cys Val Asp Cys Gln Ala Leu Asn Thr Ser Thr Cys
            340                 345                 350

Pro Pro Asn Ser Val Lys Leu Asp Ile Phe Pro Lys Glu Cys Val Tyr
        355                 360                 365

Ile His Asp Pro Thr Gly Leu Asn Val Leu Lys Lys Gly Cys Ala Ser
    370                 375                 380

Tyr Cys Asn Gln Thr Ile Met Glu Gln Gly Cys Cys Lys Gly Phe Phe
385                 390                 395                 400

Gly Pro Asp Cys Thr Gln Cys Pro Gly Gly Phe Ser Asn Pro Cys Tyr
                405                 410                 415

Gly Lys Gly Asn Cys Ser Asp Gly Ile Gln Gly Asn Gly Ala Cys Leu
            420                 425                 430

Cys Phe Pro Asp Tyr Lys Gly Ile Ala Cys His Ile Cys Ser Asn Pro
        435                 440                 445

Asn Lys His Gly Glu Gln Cys Gln Glu Asp Cys Gly Cys Val His Gly
    450                 455                 460

Leu Cys Asp Asn Arg Pro Gly Ser Gly Gly Val Cys Gln Gln Gly Thr
465                 470                 475                 480

Cys Ala Pro Gly Phe Ser Gly Arg Phe Cys Asn Glu Ser Met Gly Asp
                485                 490                 495

Cys Gly Pro Thr Gly Leu Ala Gln His Cys His Leu His Ala Arg Cys
            500                 505                 510

Val Ser Gln Glu Gly Val Ala Arg Cys Arg Cys Leu Asp Gly Phe Glu
        515                 520                 525

Gly Asp Gly Phe Ser Cys Thr Pro Ser Asn Pro Cys Ser His Pro Asp
    530                 535                 540

Arg Gly Gly Cys Ser Glu Asn Ala Glu Cys Val Pro Gly Ser Leu Gly
545                 550                 555                 560

Thr His His Cys Thr Cys His Lys Gly Trp Ser Gly Asp Gly Arg Val
                565                 570                 575

Cys Val Ala Ile Asp Glu Cys Glu Leu Asp Val Arg Gly Gly Cys His
            580                 585                 590

Thr Asp Ala Leu Cys Ser Tyr Val Gly Pro Gly Gln Ser Arg Cys Thr
        595                 600                 605
```

```
Cys Lys Leu Gly Phe Ala Gly Asp Gly Tyr Gln Cys Ser Pro Ile Asp
    610                 615                 620

Pro Cys Arg Ala Gly Asn Gly Gly Cys His Gly Leu Glu Leu Glu Ala
625                 630                 635                 640

Asn Ala His Phe Ser Ile Phe Tyr Gln Trp Leu Lys Ser Ala Gly Ile
                645                 650                 655

Thr Leu Pro Ala Asp Arg Arg Val Thr Ala Leu Val Pro Ser Glu Ala
            660                 665                 670

Ala Val Arg Gln Leu Ser Pro Glu Asp Arg Ala Phe Trp Leu Gln Pro
        675                 680                 685

Arg Thr Leu Pro Asn Leu Val Arg Ala His Phe Leu Gln Gly Ala Leu
    690                 695                 700

Phe Glu Glu Glu Leu Ala Arg Leu Gly Gly Gln Glu Val Ala Thr Leu
705                 710                 715                 720

Asn Pro Thr Thr Arg Trp Glu Ile Arg Asn Ile Ser Gly Arg Val Trp
                725                 730                 735

Val Gln Asn Ala Ser Val Asp Val Ala Asp Leu Leu Ala Thr Asn Gly
            740                 745                 750

Val Leu His Ile Leu Ser Gln Val Leu Leu Pro Pro Arg Gly Asp Val
        755                 760                 765

Pro Gly Gly Gln Gly Leu Leu Gln Gln Leu Asp Leu Val Pro Ala Phe
    770                 775                 780

Ser Leu Phe Arg Glu Leu Leu Gln His His Gly Leu Val Pro Gln Ile
785                 790                 795                 800

Glu Ala Ala Thr Ala Tyr Thr Ile Phe Val Pro Thr Asn Arg Ser Leu
                805                 810                 815

Glu Ala Gln Gly Asn Ser Ser His Leu Asp Ala Asp Thr Val Arg His
            820                 825                 830

His Val Val Leu Gly Glu Ala Leu Ser Met Glu Thr Leu Arg Lys Gly
        835                 840                 845

Gly His Arg Asn Ser Leu Leu Gly Pro Ala His Trp Ile Val Phe Tyr
    850                 855                 860

Asn His Ser Gly Gln Pro Glu Val Asn His Val Pro Leu Glu Gly Pro
865                 870                 875                 880

Met Leu Glu Ala Pro Gly Arg Ser Leu Ile Gly Leu Ser Gly Val Leu
                885                 890                 895

Thr Val Gly Ser Ser Arg Cys Leu His Ser His Ala Glu Ala Leu Arg
            900                 905                 910

Glu Lys Cys Val Asn Cys Thr Arg Arg Phe Arg Cys Thr Gln Gly Phe
        915                 920                 925

Gln Leu Gln Asp Thr Pro Arg Lys Ser Cys Val Tyr Arg Ser Gly Phe
    930                 935                 940
```

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Ser Phe Ser Arg Gly Cys Ser Tyr Thr Cys Ala Lys Lys Ile Gln Val
945                 950                 955                 960

Pro Asp Cys Cys Pro Gly Phe Phe Gly Thr Leu Cys Glu Pro Cys Pro
                965                 970                 975

Gly Gly Leu Gly Gly Val Cys Ser Gly His Gly Gln Cys Gln Asp Arg
            980                 985                 990

Phe Leu Gly Ser Gly Glu Cys His Cys His Glu Gly Phe His Gly Thr
        995                1000                1005

Ala Cys Glu Val Cys Glu Leu Gly Arg Tyr Gly Pro Asn Cys Thr Gly
   1010                1015                1020

Val Cys Asp Cys Ala His Gly Leu Cys Gln Glu Gly Leu Gln Gly Asp
1025                1030                1035                1040

Gly Ser Cys Val Cys Asn Val Gly Trp Gln Gly Leu Arg Cys Asp Gln
                1045                1050                1055

Lys Ile Thr Ser Pro Gln Cys Pro Arg Lys Cys Asp Pro Asn Ala Asn
            1060                1065                1070

Cys Val Gln Asp Ser Ala Gly Ala Ser Thr Cys Ala Cys Ala Ala Gly
        1075                1080                1085

Tyr Ser Gly Asn Gly Ile Phe Cys Ser Glu Val Asp Pro Cys Ala His
   1090                1095                1100

Gly His Gly Gly Cys Ser Pro His Ala Asn Cys Thr Lys Val Ala Pro
1105                1110                1115                1120

Gly Gln Arg Thr Cys Thr Cys Gln Asp Gly Tyr Met Gly Asp Gly Glu
                1125                1130                1135

Leu Cys Gln Glu Ile Asn Ser Cys Leu Ile His His Gly Gly Cys His
            1140                1145                1150

Ile His Ala Glu Cys Ile Pro Thr Gly Pro Gln Gln Val Ser Cys Ser
        1155                1160                1165

Cys Arg Glu Gly Tyr Ser Gly Asp Gly Ile Arg Thr Cys Glu Leu Leu
   1170                1175                1180

Asp Pro Cys Ser Lys Asn Asn Gly Gly Cys Ser Pro Tyr Ala Thr Cys
1185                1190                1195                1200

Lys Ser Thr Gly Asp Gly Gln Arg Thr Cys Thr Cys Asp Thr Ala His
                1205                1210                1215

Thr Val Gly Asp Gly Leu Thr Cys Arg Ala Arg Val Gly Leu Glu Leu
            1220                1225                1230

Leu Arg Asp Lys His Ala Ser Phe Phe Ser Leu Arg Leu Leu Glu Tyr
        1235                1240                1245

Lys Glu Leu Lys Gly Asp Gly Pro Phe Thr Ile Phe Val Pro His Ala
   1250                1255                1260

Asp Leu Met Ser Asn Leu Ser Gln Asp Glu Leu Ala Arg Ile Arg Ala
1265                1270                1275                1280
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His Arg Gln Leu Val Phe Arg Tyr His Val Val Gly Cys Arg Arg Leu
                1285                1290                1295

Arg Ser Glu Asp Leu Leu Glu Gln Gly Tyr Ala Thr Ala Leu Ser Gly
            1300                1305                1310

His Pro Leu Arg Phe Ser Glu Arg Glu Gly Ser Ile Tyr Leu Asn Asp
        1315                1320                1325

Phe Ala Arg Val Val Ser Ser Asp His Glu Ala Val Asn Gly Ile Leu
    1330                1335                1340

His Phe Ile Asp Arg Val Leu Leu Pro Pro Glu Ala Leu His Trp Glu
1345                1350                1355                1360

Pro Asp Asp Ala Pro Ile Pro Arg Arg Asn Val Thr Ala Ala Ala Gln
                1365                1370                1375

Gly Phe Gly Tyr Lys Ile Phe Ser Gly Leu Leu Lys Val Ala Gly Leu
            1380                1385                1390

Leu Pro Leu Leu Arg Glu Ala Ser His Arg Pro Phe Thr Met Leu Trp
        1395                1400                1405

Pro Thr Asp Ala Ala Phe Arg Ala Leu Pro Pro Asp Arg Gln Ala Trp
    1410                1415                1420

Leu Tyr His Glu Asp His Arg Asp Lys Leu Ala Ala Ile Leu Arg Gly
1425                1430                1435                1440

His Met Ile Arg Asn Val Glu Ala Leu Ala Ser Asp Leu Pro Asn Leu
                1445                1450                1455

Gly Pro Leu Arg Thr Met His Gly Thr Pro Ile Ser Phe Ser Cys Ser
            1460                1465                1470

Arg Thr Arg Pro Gly Glu Leu Met Val Gly Glu Asp Asp Ala Arg Ile
        1475                1480                1485

Val Gln Arg His Leu Pro Phe Glu Gly Gly Leu Ala Tyr Gly Ile Asp
    1490                1495                1500

Gln Leu Leu Glu Pro Pro Gly Leu Gly Ala Arg Cys Asp His Phe Glu
1505                1510                1515                1520

Thr Arg Pro Leu Arg Leu Asn Thr Cys Ser Ile Cys Gly Leu Glu Pro
                1525                1530                1535

Pro Cys Pro Glu Gly Ser Gln Glu Gln Gly Ser Pro Glu Ala Cys Trp
            1540                1545                1550

Arg Phe Tyr Pro Lys Phe Trp Thr Ser Pro Pro Leu His Ser Leu Gly
        1555                1560                1565

Leu Arg Ser Val Trp Val His Pro Ser Leu Trp Gly Arg Pro Gln Gly
    1570                1575                1580

Leu Gly Arg Gly Cys His Arg Asn Cys Val Thr Thr Thr Trp Lys Pro
1585                1590                1595                1600

Ser Cys Cys Pro Gly His Tyr Gly Ser Glu Cys Gln Ala Cys Pro Gly
                1605                1610                1615
```

```
Gly Pro Ser Ser Pro Cys Ser Asp Arg Gly Val Cys Met Asp Gly Met
          1620                1625                1630

Ser Gly Ser Gly Gln Cys Leu Cys Arg Ser Gly Phe Ala Gly Thr Ala
       1635                1640                1645

Cys Glu Leu Cys Ala Pro Gly Ala Phe Gly Pro His Cys Gln Ala Cys
   1650                1655                1660

Arg Cys Thr Val His Gly Arg Cys Asp Glu Gly Leu Gly Gly Ser Gly
1665                1670                1675                1680

Ser Cys Phe Cys Asp Glu Gly Trp Thr Gly Pro Arg Cys Glu Val Gln
               1685                1690                1695

Leu Glu Leu Gln Pro Val Cys Thr Pro Pro Cys Ala Pro Glu Ala Val
          1700                1705                1710

Cys Arg Ala Gly Asn Ser Cys Glu Cys Ser Leu Gly Tyr Glu Gly Asp
       1715                1720                1725

Gly Arg Val Cys Thr Val Ala Asp Leu Cys Gln Asp Gly His Gly Gly
   1730                1735                1740

Cys Ser Glu His Ala Asn Cys Ser Gln Val Gly Thr Met Val Thr Cys
1745                1750                1755                1760

Thr Cys Leu Pro Asp Tyr Glu Gly Asp Gly Trp Ser Cys Arg Ala Arg
               1765                1770                1775

Asn Pro Cys Thr Asp Gly His Arg Gly Gly Cys Ser Glu His Ala Asn
          1780                1785                1790

Cys Leu Ser Thr Gly Leu Asn Thr Arg Arg Cys Glu Cys His Ala Gly
       1795                1800                1805

Tyr Val Gly Asp Gly Leu Gln Cys Leu Glu Glu Ser Glu Pro Pro Val
   1810                1815                1820

Asp Arg Cys Leu Gly Gln Pro Pro Pro Cys His Ser Asp Ala Met Cys
1825                1830                1835                1840

Thr Asp Leu His Phe Gln Glu Lys Arg Ala Gly Val Phe His Leu Gln
               1845                1850                1855

Ala Thr Ser Gly Pro Tyr Gly Leu Asn Phe Ser Glu Ala Glu Ala Ala
          1860                1865                1870

Cys Glu Ala Gln Gly Ala Val Leu Ala Ser Phe Pro Gln Leu Ser Ala
       1875                1880                1885

Ala Gln Gln Leu Gly Phe His Leu Cys Leu Met Gly Trp Leu Ala Asn
   1890                1895                1900

Gly Ser Thr Ala His Pro Val Val Phe Pro Val Ala Asp Cys Gly Asn
1905                1910                1915                1920

Gly Arg Val Gly Ile Val Ser Leu Gly Ala Arg Lys Asn Leu Ser Glu
               1925                1930                1935

Arg Trp Asp Ala Tyr Cys Phe Arg Val Gln Asp Val Ala Cys Arg Cys
          1940                1945                1950
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Arg Asn Gly Phe Val Gly Asp Gly Ile Ser Thr Cys Asn Gly Lys Leu
       1955                1960                1965

Leu Asp Val Leu Ala Ala Thr Ala Asn Phe Ser Thr Phe Tyr Gly Met
   1970                1975                1980

Leu Leu Gly Tyr Ala Asn Ala Thr Gln Arg Gly Leu Asp Phe Leu Asp
1985                1990                1995                2000

Phe Leu Asp Asp Glu Leu Thr Tyr Lys Thr Leu Phe Val Pro Val Asn
               2005                2010                2015

Glu Gly Phe Val Asp Asn Met Thr Leu Ser Gly Pro Asp Leu Glu Leu
           2020                2025                2030

His Ala Ser Asn Ala Thr Leu Leu Ser Ala Asn Ala Ser Gln Gly Lys
       2035                2040                2045

Leu Leu Pro Ala His Ser Gly Leu Ser Leu Ile Ile Ser Asp Ala Gly
   2050                2055                2060

Pro Asp Asn Ser Ser Trp Ala Pro Val Ala Pro Gly Thr Val Val Val
2065                2070                2075                2080

Ser Arg Ile Ile Val Trp Asp Ile Met Ala Phe Asn Gly Ile Ile His
               2085                2090                2095

Ala Leu Ala Ser Pro Leu Leu Ala Pro Pro Gln Pro Ala Val Leu Ala
           2100                2105                2110

Pro Glu Ala Pro Pro Val Ala Ala Gly Val Gly Ala Val Leu Ala Ala
       2115                2120                2125

Gly Ala Leu Leu Gly Leu Val Ala Gly Ala Leu Tyr Leu Arg Ala Arg
   2130                2135                2140

Gly Lys Pro Met Gly Phe Gly Phe Ser Ala Phe Gln Ala Glu Asp Asp
2145                2150                2155                2160

Ala Asp Asp Asp Phe Ser Pro Trp Gln Glu Gly Thr Asn Pro Thr Leu
               2165                2170                2175

Val Ser Val Pro Asn Pro Val Phe Gly Ser Asp Thr Phe Cys Glu Pro
           2180                2185                2190

Phe Asp Asp Ser Leu Leu Glu Glu Asp Phe Pro Asp Thr Gln Arg Ile
       2195                2200                2205

Leu Thr Val Lys
   2210
```

<210> 44
<211> 149
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Fasciclin Domain Sequence

<400> 44

```
Ala Gly Thr Val Met Glu Lys Leu Lys Thr Asp Pro Arg Phe Ser Thr
 1               5                  10                  15

Leu Val Ala Ala Leu Glu Ala Ala Asp Leu Val Glu Thr Leu Asn Asn
            20                  25                  30

Ser Gly Asp Phe Thr Val Phe Ala Pro Thr Asn Asp Ala Phe Gln Lys
        35                  40                  45

Leu Pro Ala Gly Asp Leu Lys Thr Leu Asp Glu Leu Leu Asn Lys Glu
    50                  55                  60

Asp Ala Lys Gln Leu Ala Lys Ile Leu Thr Tyr His Val Val Ala Gly
65                  70                  75                  80

Lys Leu Ser Thr Ala Asp Leu Leu Ser Leu Ser Thr Pro Val Leu Thr
                85                  90                  95

Ser Leu Gln Gly Ser Lys Ile Thr Val Ser Gly Lys Asn Asp Thr Glu
            100                 105                 110

Leu Leu Lys Asp Val Asn Val Leu Lys Val Asn Asn Ala Thr Val Ile
        115                 120                 125

Val Glu Ser Asp Ile Glu Thr Thr Asn Gly Val Ile His Val Ile Asp
    130                 135                 140

Arg Val Leu Leu Pro
145
```

<210> 45
<211> 149
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Fasciclin domain sequence

<400> 45

```
Ala Gly Thr Val Met Glu Lys Leu Lys Thr Asp Pro Arg Phe Ser Thr
 1               5                  10                  15

Leu Val Ala Ala Leu Glu Ala Ala Asp Leu Val Glu Thr Leu Asn Asn
            20                  25                  30

Ser Gly Asp Phe Thr Val Phe Ala Pro Thr Asn Asp Ala Phe Gln Lys
        35                  40                  45

Leu Pro Ala Gly Asp Leu Lys Thr Leu Asp Glu Leu Leu Asn Lys Glu
    50                  55                  60

Asp Ala Lys Gln Leu Ala Lys Ile Leu Thr Tyr His Val Val Ala Gly
65                  70                  75                  80

Lys Leu Ser Thr Ala Asp Leu Leu Ser Leu Ser Thr Pro Val Leu Thr
                85                  90                  95

Ser Leu Gln Gly Ser Lys Ile Thr Val Ser Gly Lys Asn Asp Thr Glu
            100                 105                 110

Leu Leu Lys Asp Val Asn Val Leu Lys Val Asn Asn Ala Thr Val Ile
```

115 120 125

Val Glu Ser Asp Ile Glu Thr Thr Asn Gly Val Ile His Val Ile Asp
130 135 140

Arg Val Leu Leu Pro
145

<210> 46
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: XLINK domain sequence

<400> 46
Gly Glu Val Phe His Tyr Arg Ala Pro Ser Gly Arg Tyr Lys Leu Thr
1 5 10 15

Phe Glu Glu Ala Gln Ala Ala Cys Leu Arg Gln Gly Ala Arg Ile Ala
20 25 30

Thr Thr Gly Gln Leu Tyr Ala Ala Trp Lys Gly Gly Phe Asp Gln Cys
35 40 45

Asp Ala Gly Trp Leu Ala Asp Gly Ser Val Arg Tyr Pro Ile Val Lys
50 55 60

Pro Arg Glu Asn Cys Gly Gly Asp Lys Asp Gly Phe Pro Gly Val Arg
65 70 75 80

Thr Tyr Tyr Leu Phe Pro Asn Gln Thr Gly Phe Pro Asp Asp Pro Ser
85 90 95

Ser Arg Tyr Asp Val Tyr Cys Phe
100

<210> 47
<211> 3567
<212> PRT
<213> Mus musculus

<400> 47
Met Trp Ser Arg Leu Ala Phe Cys Cys Trp Ala Leu Ala Leu Val Ser
1 5 10 15

Gly Trp Thr Asn Phe Gln Pro Val Ala Pro Ser Leu Asn Phe Ser Phe
20 25 30

Arg Leu Phe Pro Glu Ala Ser Pro Gly Ala Leu Gly Arg Leu Ala Val
35 40 45

Pro Pro Ala Ser Ser Glu Glu Glu Ala Ala Gly Ser Lys Val Glu Arg
50 55 60

Leu Gly Arg Ala Phe Arg Ser Arg Val Arg Arg Leu Arg Glu Leu Ser
65 70 75 80

Gly Ser Leu Glu Leu Val Phe Leu Val Asp Glu Ser Ser Ser Val Gly

```
                85                  90                  95

Gln Thr Asn Phe Leu Asn Glu Leu Lys Phe Val Arg Lys Leu Leu Ser
            100                 105                 110

Asp Phe Pro Val Val Ser Thr Ala Thr Arg Val Ala Ile Val Thr Phe
        115                 120                 125

Ser Ser Lys Asn Asn Val Val Ala Arg Val Asp Tyr Ile Ser Thr Ser
    130                 135                 140

Arg Ala His Gln His Lys Cys Ala Leu Leu Ser Arg Glu Ile Pro Ala
145                 150                 155                 160

Ile Thr Tyr Arg Gly Gly Gly Thr Tyr Thr Lys Gly Ala Phe Gln Gln
                165                 170                 175

Ala Ala Gln Ile Leu Arg His Ser Arg Glu Asn Ser Thr Lys Val Ile
            180                 185                 190

Phe Leu Ile Thr Asp Gly Tyr Ser Asn Gly Gly Asp Pro Arg Pro Ile
        195                 200                 205

Ala Ala Ser Leu Arg Asp Phe Gly Val Glu Ile Phe Thr Phe Gly Ile
    210                 215                 220

Trp Gln Gly Asn Ile Arg Glu Leu Asn Asp Met Ala Ser Thr Pro Lys
225                 230                 235                 240

Glu Glu His Cys Tyr Leu Leu His Ser Phe Glu Glu Phe Glu Ala Leu
                245                 250                 255

Ala Arg Arg Ala Leu His Glu Asp Leu Pro Ser Gly Ser Phe Ile Gln
            260                 265                 270

Glu Asp Met Ala Arg Cys Ser Tyr Leu Cys Glu Ala Gly Lys Asp Cys
        275                 280                 285

Cys Asp Arg Met Ala Ser Cys Lys Cys Gly Thr His Thr Gly Gln Phe
    290                 295                 300

Glu Cys Ile Cys Glu Lys Gly Tyr Tyr Gly Lys Gly Leu Gln His Glu
305                 310                 315                 320

Cys Thr Ala Cys Pro Ser Gly Thr Tyr Lys Pro Glu Ala Ser Pro Gly
                325                 330                 335

Gly Ile Ser Thr Cys Ile Pro Cys Pro Asp Val Ser His Thr Ser Pro
            340                 345                 350

Pro Gly Ser Thr Ser Pro Glu Asp Cys Val Cys Arg Glu Gly Tyr Gln
        355                 360                 365

Arg Ser Gly Gln Thr Cys Glu Val Val His Cys Pro Ala Leu Lys Pro
    370                 375                 380

Pro Glu Asn Gly Phe Phe Ile Gln Asn Thr Cys Lys Asn His Phe Asn
385                 390                 395                 400

Ala Ala Cys Gly Val Arg Cys Arg Pro Gly Phe Asp Leu Val Gly Ser
                405                 410                 415

Ser Ile His Leu Cys Gln Pro Asn Gly Leu Trp Ser Gly Thr Glu Ser
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                420                 425                 430

Phe Cys Arg Val Arg Thr Cys Pro His Leu Arg Gln Pro Lys His Gly
        435                 440                 445

His Ile Ser Cys Ser Thr Ala Glu Met Ser Tyr Asn Thr Leu Cys Leu
    450                 455                 460

Val Thr Cys Asn Glu Gly Tyr Arg Leu Glu Gly Ser Thr Arg Leu Thr
465                 470                 475                 480

Cys Gln Gly Asn Ala Gln Trp Asp Gly Pro Glu Pro Arg Cys Val Glu
                485                 490                 495

Arg His Cys Ala Thr Phe Gln Lys Pro Lys Gly Val Ile Ile Ser Pro
            500                 505                 510

Pro Ser Cys Gly Lys Gln Pro Ala Arg Pro Gly Met Thr Cys Gln Leu
        515                 520                 525

Ser Cys Arg Gln Gly Tyr Ile Leu Ser Gly Val Arg Glu Val Arg Cys
    530                 535                 540

Ala Thr Ser Gly Lys Trp Ser Ala Lys Val Gln Thr Ala Val Cys Lys
545                 550                 555                 560

Asp Val Glu Ala Pro Gln Ile Ser Cys Pro Asn Asp Ile Glu Ala Lys
                565                 570                 575

Thr Gly Glu Gln Gln Asp Ser Ala Asn Val Thr Trp Gln Val Pro Thr
            580                 585                 590

Ala Lys Asp Asn Ser Gly Glu Lys Val Ser Val His Val His Pro Ala
        595                 600                 605

Phe Thr Pro Pro Tyr Leu Phe Pro Ile Gly Asp Val Ala Ile Thr Tyr
    610                 615                 620

Thr Ala Thr Asp Ser Ser Gly Asn Gln Ala Ser Cys Thr Phe Tyr Ile
625                 630                 635                 640

Lys Val Ile Asp Val Glu Pro Pro Val Ile Asp Trp Cys Arg Ser Pro
                645                 650                 655

Pro Pro Ile Gln Val Val Glu Lys Glu His Pro Ala Ser Trp Asp Glu
            660                 665                 670

Pro Gln Phe Ser Asp Asn Ser Gly Ala Glu Leu Val Ile Thr Ser Ser
        675                 680                 685

His Thr Gln Gly Asp Met Phe Pro His Gly Glu Thr Val Val Trp Tyr
    690                 695                 700

Thr Ala Thr Asp Pro Ser Gly Asn Asn Arg Thr Cys Asp Ile His Ile
705                 710                 715                 720

Val Ile Lys Gly Ser Pro Cys Glu Val Pro Phe Thr Pro Val Asn Gly
                725                 730                 735

Asp Phe Ile Cys Ala Gln Asp Ser Ala Gly Val Asn Cys Ser Leu Ser
            740                 745                 750

Cys Lys Glu Gly Tyr Asp Phe Thr Glu Gly Ser Thr Glu Lys Tyr Tyr
```

```
        755                 760                 765

Cys Ala Phe Glu Asp Gly Ile Trp Arg Pro Pro Tyr Ser Thr Glu Trp
    770                 775                 780

Pro Asp Cys Ala Ile Lys Arg Phe Ala Asn His Gly Phe Lys Ser Phe
785                 790                 795                 800

Glu Met Leu Tyr Lys Thr Thr Arg Cys Asp Asp Met Asp Leu Phe Lys
                805                 810                 815

Lys Phe Ser Ala Ala Phe Glu Thr Thr Leu Gly Asn Met Val Pro Ser
            820                 825                 830

Phe Cys Asn Asp Ala Asp Asp Ile Asp Cys Arg Leu Glu Asp Leu Thr
        835                 840                 845

Lys Lys Tyr Cys Ile Glu Tyr Asn Tyr Asn Tyr Glu Asn Gly Phe Ala
    850                 855                 860

Ile Gly Pro Gly Gly Trp Gly Ala Gly Asn Arg Leu Asp Tyr Ser Tyr
865                 870                 875                 880

Asp His Phe Leu Asp Val Val Gln Glu Thr Pro Thr Asp Val Gly Lys
                885                 890                 895

Ala Arg Ser Ser Arg Ile Lys Arg Thr Val Pro Leu Ser Asp Pro Lys
            900                 905                 910

Ile Gln Leu Ile Phe Asn Ile Thr Ala Ser Val Pro Leu Pro Glu Glu
        915                 920                 925

Arg Asn Asp Thr Leu Glu Leu Glu Asn Gln Gln Arg Leu Ile Lys Thr
    930                 935                 940

Leu Glu Thr Ile Thr Asn Arg Leu Lys Ser Thr Leu Asn Lys Glu Pro
945                 950                 955                 960

Met Tyr Ser Phe Gln Leu Ala Ser Glu Thr Val Val Ala Asp Ser Asn
                965                 970                 975

Ser Leu Glu Thr Glu Lys Ala Phe Leu Phe Cys Arg Pro Gly Ser Val
            980                 985                 990

Leu Arg Gly Arg Met Cys Val Asn Cys Pro Leu Gly Thr Ser Tyr Ser
        995                1000                1005

Leu Glu His Ser Thr Cys Glu Ser Cys Leu Met Gly Ser Tyr Gln Asp
   1010                1015                1020

Glu Glu Gly Gln Leu Glu Cys Lys Leu Cys Pro Pro Arg Thr His Thr
1025                1030                1035                1040

Glu Tyr Leu His Ser Arg Ser Val Ser Glu Cys Lys Ala Gln Cys Lys
                1045                1050                1055

Gln Gly Thr Tyr Ser Ser Ser Gly Leu Glu Thr Cys Glu Ser Cys Pro
            1060                1065                1070

Leu Gly Thr Tyr Gln Pro Glu Phe Gly Ser Arg Ser Cys Leu Leu Cys
        1075                1080                1085

Pro Glu Thr Thr Thr Thr Val Lys Arg Gly Ala Val Asp Ile Ser Ala
```

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1090                1095                1100

Cys Gly Val Pro Cys Pro Val Gly Glu Phe Ser Arg Ser Gly Leu Thr
1105                1110                1115                1120

Pro Cys Tyr Pro Cys Pro Arg Asp Tyr Tyr Gln Pro Asn Ala Gly Lys
                1125                1130                1135

Ser Phe Cys Leu Ala Cys Pro Phe Tyr Gly Thr Thr Thr Ile Thr Gly
            1140                1145                1150

Ala Thr Ser Ile Thr Asp Cys Ser Ser Phe Ser Ser Thr Phe Ser Ala
        1155                1160                1165

Ala Glu Glu Ser Ile Val Pro Leu Val Ala Pro Gly His Ser Gln Asn
    1170                1175                1180

Lys Tyr Glu Val Ser Ser Gln Val Phe His Glu Cys Phe Leu Asn Pro
1185                1190                1195                1200

Cys His Asn Ser Gly Thr Cys Gln Gln Leu Gly Arg Gly Tyr Val Cys
                1205                1210                1215

Leu Cys Pro Pro Gly Tyr Thr Gly Leu Lys Cys Glu Thr Asp Ile Asp
            1220                1225                1230

Glu Cys Ser Ser Leu Pro Cys Leu Asn Gly Gly Ile Cys Arg Asp Gln
        1235                1240                1245

Val Gly Gly Phe Thr Cys Glu Cys Ser Leu Gly Tyr Ser Gly Gln Ile
    1250                1255                1260

Cys Glu Glu Asn Ile Asn Glu Cys Ile Ser Ser Pro Cys Leu Asn Lys
1265                1270                1275                1280

Gly Thr Cys Thr Asp Gly Leu Ala Ser Tyr Arg Cys Thr Cys Val Lys
                1285                1290                1295

Gly Tyr Met Gly Val His Cys Glu Thr Asp Val Asn Glu Cys Gln Ser
            1300                1305                1310

Ser Pro Cys Leu Asn Asn Ala Val Cys Lys Asp Gln Val Gly Gly Phe
        1315                1320                1325

Ser Cys Lys Cys Pro Pro Gly Phe Leu Gly Thr Arg Cys Glu Lys Asn
    1330                1335                1340

Val Asp Glu Cys Leu Ser Gln Pro Cys Gln Asn Gly Ala Thr Cys Lys
1345                1350                1355                1360

Asp Gly Ala Asn Ser Phe Arg Cys Gln Cys Pro Ala Gly Phe Thr Gly
                1365                1370                1375

Thr His Cys Glu Leu Asn Ile Asn Glu Cys Gln Ser Asn Pro Cys Arg
            1380                1385                1390

Asn Gln Ala Thr Cys Val Asp Glu Leu Asn Ser Tyr Ser Cys Lys Cys
        1395                1400                1405

Gln Pro Gly Phe Ser Gly His Arg Cys Glu Thr Glu Gln Pro Ser Gly
    1410                1415                1420

Phe Asn Leu Asp Phe Glu Val Ser Gly Ile Tyr Gly Tyr Val Leu Leu
```

```
1425                1430                1435                1440

Asp Gly Val Leu Pro Thr Leu His Ala Ile Thr Cys Ala Phe Trp Met
                1445                1450                1455

Lys Ser Ser Asp Val Ile Asn Tyr Gly Thr Pro Ile Ser Tyr Ala Leu
            1460                1465                1470

Glu Asp Asp Lys Asp Asn Thr Ser Leu Leu Thr Asp Tyr Asn Gly Trp
        1475                1480                1485

Val Leu Tyr Val Asn Gly Lys Glu Lys Ile Thr Asn Cys Pro Ser Val
    1490                1495                1500

Asn Asp Gly Ile Trp His His Ile Ala Ile Thr Trp Thr Ser Thr Gly
1505                1510                1515                1520

Gly Ala Trp Arg Val Tyr Ile Asn Gly Glu Leu Ser Asp Gly Gly Thr
                1525                1530                1535

Gly Leu Ser Ile Gly Lys Ala Ile Pro Gly Gly Gly Ala Leu Val Leu
            1540                1545                1550

Gly Gln Glu Gln Asp Lys Lys Gly Glu Gly Phe Asn Pro Ala Glu Ser
        1555                1560                1565

Phe Val Gly Ser Ile Ser Gln Leu Asn Leu Trp Asp Tyr Val Leu Ser
    1570                1575                1580

Pro Gln Gln Val Lys Leu Leu Ala Ser Ser Cys Pro Glu Glu Leu Ser
1585                1590                1595                1600

Arg Gly Asn Val Leu Ala Trp Pro Asp Phe Leu Ser Gly Ile Thr Gly
                1605                1610                1615

Lys Val Lys Val Asp Ser Ser Ser Met Phe Cys Ser Asp Cys Pro Ser
            1620                1625                1630

Leu Glu Gly Ser Val Pro His Leu Arg Pro Ala Ser Gly Asn Arg Lys
        1635                1640                1645

Pro Gly Ser Lys Val Ser Leu Phe Cys Asp Pro Gly Phe Gln Met Val
    1650                1655                1660

Gly Asn Pro Val Gln Tyr Cys Leu Asn Gln Gly Gln Trp Thr Gln Pro
1665                1670                1675                1680

Leu Pro His Cys Glu Arg Ile Arg Cys Gly Leu Pro Pro Ala Leu Glu
                1685                1690                1695

Asn Gly Phe Tyr Ser Ala Glu Asp Phe His Ala Gly Ser Thr Val Thr
            1700                1705                1710

Tyr Gln Cys Thr Ser Gly Tyr Tyr Leu Leu Gly Asp Ser Arg Met Phe
        1715                1720                1725

Cys Thr Asp Asn Gly Ser Trp Asn Gly Ile Ser Pro Ser Cys Leu Asp
    1730                1735                1740

Val Asp Glu Cys Ala Val Gly Ser Asp Cys Ser Glu His Ala Ser Cys
1745                1750                1755                1760

Leu Asn Thr Asn Gly Ser Tyr Val Cys Ser Cys Asn Pro Pro Tyr Thr
```

```
                1765                1770                1775

Gly Asp Gly Lys Asn Cys Ala Glu Pro Val Lys Cys Lys Ala Pro Glu
            1780                1785                1790

Asn Pro Glu Asn Gly His Ser Ser Gly Glu Ile Tyr Thr Val Gly Thr
        1795                1800                1805

Ala Val Thr Phe Ser Cys Asp Glu Gly His Glu Leu Val Gly Val Ser
    1810                1815                1820

Thr Ile Thr Cys Leu Glu Thr Gly Glu Trp Asp Arg Leu Arg Pro Ser
1825                1830                1835                1840

Cys Glu Ala Ile Ser Cys Gly Val Pro Pro Val Pro Glu Asn Gly Gly
                1845                1850                1855

Val Asp Gly Ser Ala Phe Thr Tyr Gly Ser Lys Val Val Tyr Arg Cys
            1860                1865                1870

Asp Lys Gly Tyr Thr Leu Ser Gly Asp Glu Glu Ser Ala Cys Leu Ala
        1875                1880                1885

Ser Gly Ser Trp Ser His Ser Ser Pro Val Cys Glu Leu Val Lys Cys
    1890                1895                1900

Ser Gln Pro Glu Asp Ile Asn Asn Gly Lys Tyr Ile Leu Ser Gly Leu
1905                1910                1915                1920

Thr Tyr Leu Ser Ile Ala Ser Tyr Ser Cys Glu Asn Gly Tyr Ser Leu
                1925                1930                1935

Gln Gly Pro Ser Leu Leu Glu Cys Thr Ala Ser Gly Ser Trp Asp Arg
            1940                1945                1950

Ala Pro Pro Ser Cys Gln Leu Val Ser Cys Gly Glu Pro Pro Ile Val
        1955                1960                1965

Lys Asp Ala Val Ile Thr Gly Ser Asn Phe Thr Phe Gly Asn Thr Val
    1970                1975                1980

Ala Tyr Thr Cys Lys Glu Gly Tyr Thr Leu Ala Gly Pro Asp Thr Ile
1985                1990                1995                2000

Val Cys Gln Ala Asn Gly Lys Trp Asn Ser Ser Asn His Gln Cys Leu
                2005                2010                2015

Ala Val Ser Cys Asp Glu Pro Pro Asn Val Asp His Ala Ser Pro Glu
            2020                2025                2030

Thr Ala His Arg Leu Phe Gly Asp Thr Ala Phe Tyr Tyr Cys Ala Asp
        2035                2040                2045

Gly Tyr Ser Leu Ala Asp Asn Ser Gln Leu Ile Cys Asn Ala Gln Gly
    2050                2055                2060

Asn Trp Val Pro Pro Ala Gly Gln Ala Val Pro Arg Cys Ile Ala His
2065                2070                2075                2080

Phe Cys Glu Lys Pro Pro Ser Val Ser Tyr Ser Ile Leu Glu Ser Val
                2085                2090                2095

Ser Lys Ala Lys Phe Ala Ala Gly Ser Val Val Ser Phe Lys Cys Met
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          2100                2105                2110

Glu Gly Phe Val Leu Asn Thr Ser Ala Lys Ile Glu Cys Leu Arg Gly
       2115                2120                2125

Gly Glu Trp Ser Pro Ser Pro Leu Ser Val Gln Cys Ile Pro Val Arg
   2130                2135                2140

Cys Gly Glu Pro Pro Ser Ile Ala Asn Gly Tyr Pro Ser Gly Thr Asn
2145                2150                2155                2160

Tyr Ser Phe Gly Ala Val Val Ala Tyr Ser Cys His Lys Gly Phe Tyr
               2165                2170                2175

Ile Lys Gly Glu Lys Lys Ser Thr Cys Glu Ala Thr Gly Gln Trp Ser
           2180                2185                2190

Lys Pro Thr Pro Thr Cys His Pro Val Ser Cys Asn Glu Pro Pro Lys
       2195                2200                2205

Val Glu Asn Gly Phe Leu Glu His Thr Thr Gly Arg Thr Phe Glu Ser
   2210                2215                2220

Glu Ala Arg Phe Gln Cys Asn Pro Gly Tyr Lys Ala Ala Gly Ser Pro
2225                2230                2235                2240

Val Phe Val Cys Gln Ala Asn Arg His Trp His Ser Asp Ala Pro Leu
               2245                2250                2255

Ser Cys Thr Pro Leu Asn Cys Gly Lys Pro Pro Pro Ile Gln Asn Gly
           2260                2265                2270

Phe Leu Lys Gly Glu Ser Phe Glu Val Gly Ser Lys Val Gln Phe Val
       2275                2280                2285

Cys Asn Glu Gly Tyr Glu Leu Val Gly Asp Asn Ser Trp Thr Cys Gln
   2290                2295                2300

Lys Ser Gly Lys Trp Ser Lys Lys Pro Ser Pro Lys Cys Val Pro Thr
2305                2310                2315                2320

Lys Cys Ala Glu Pro Pro Leu Leu Glu Asn Gln Leu Val Leu Lys Glu
               2325                2330                2335

Leu Ala Ser Glu Val Gly Val Met Thr Ile Ser Cys Lys Glu Gly His
           2340                2345                2350

Ala Leu Gln Gly Pro Ser Val Leu Lys Cys Leu Pro Ser Gly Gln Trp
       2355                2360                2365

Asn Gly Ser Phe Pro Ile Cys Lys Met Val Leu Cys Pro Ser Pro Pro
   2370                2375                2380

Leu Ile Pro Phe Gly Val Pro Ala Ser Ser Gly Ala Leu His Phe Gly
2385                2390                2395                2400

Ser Thr Val Lys Tyr Leu Cys Val Asp Gly Phe Phe Leu Arg Gly Ser
               2405                2410                2415

Pro Thr Ile Leu Cys Gln Ala Asp Ser Thr Trp Ser Ser Pro Leu Pro
           2420                2425                2430

Glu Cys Val Pro Val Glu Cys Pro Gln Pro Glu Glu Ile Leu Asn Gly
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       2435                2440                2445

Ile Ile His Val Gln Gly Leu Ala Tyr Leu Ser Thr Thr Leu Tyr Thr
   2450                2455                2460

Cys Lys Pro Gly Phe Glu Leu Val Gly Asn Ala Thr Thr Leu Cys Gly
2465                2470                2475                2480

Glu Asn Gly Gln Trp Leu Gly Gly Lys Pro Met Cys Lys Pro Ile Glu
                2485                2490                2495

Cys Pro Glu Pro Lys Glu Ile Leu Asn Gly Gln Phe Ser Ser Val Ser
           2500                2505                2510

Phe Gln Tyr Gly Gln Thr Ile Thr Tyr Phe Cys Asp Arg Gly Phe Arg
       2515                2520                2525

Leu Glu Gly Pro Lys Ser Leu Thr Cys Leu Glu Thr Gly Asp Trp Asp
   2530                2535                2540

Met Asp Pro Pro Ser Cys Asp Ala Ile His Cys Ser Asp Pro Gln Pro
2545                2550                2555                2560

Ile Glu Asn Gly Phe Val Glu Gly Ala Asp Tyr Arg Tyr Gly Ala Met
                2565                2570                2575

Ile Ile Tyr Ser Cys Phe Pro Gly Phe Gln Val Leu Gly His Ala Met
           2580                2585                2590

Gln Thr Cys Glu Glu Ser Gly Trp Ser Ser Ser Ser Pro Thr Cys Val
       2595                2600                2605

Pro Ile Asp Cys Gly Leu Pro Pro His Ile Asp Phe Gly Asp Cys Thr
   2610                2615                2620

Lys Val Arg Asp Gly Gln Gly His Phe Asp Gln Glu Asp Asp Met Met
2625                2630                2635                2640

Glu Val Pro Tyr Leu Ala His Pro Gln His Leu Glu Ala Thr Ala Lys
                2645                2650                2655

Ala Leu Glu Asn Thr Lys Glu Ser Pro Ala Ser His Ala Ser His Phe
           2660                2665                2670

Leu Tyr Gly Thr Met Val Ser Tyr Ser Cys Glu Pro Gly Tyr Glu Leu
       2675                2680                2685

Leu Gly Ile Pro Val Leu Ile Cys Gln Glu Asp Gly Thr Trp Asn Gly
   2690                2695                2700

Thr Ala Pro Ser Cys Ile Ser Ile Glu Cys Asp Leu Pro Val Ala Pro
2705                2710                2715                2720

Glu Asn Gly Phe Leu His Phe Thr Gln Thr Thr Met Gly Ser Ala Ala
                2725                2730                2735

Gln Tyr Ser Cys Lys Pro Gly His Ile Leu Glu Gly Ser His Leu Arg
           2740                2745                2750

Leu Cys Leu Gln Asn Lys Gln Trp Ser Gly Thr Val Pro Arg Cys Glu
       2755                2760                2765

Ala Ile Ser Cys Ser Lys Pro Asn Pro Leu Trp Asn Gly Ser Ile Lys
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   2770                2775                2780

Gly Asp Asp Tyr Ser Tyr Leu Gly Val Leu Tyr Tyr Glu Cys Asp Ser
2785                2790                2795                2800

Gly Tyr Ile Leu Asn Gly Ser Lys Lys Arg Thr Cys Gln Glu Asn Arg
                2805                2810                2815

Asp Trp Asp Gly His Glu Pro Met Cys Ile Pro Val Asp Cys Gly Ser
            2820                2825                2830

Pro Pro Val Pro Thr Asn Gly Arg Val Lys Gly Glu Glu Tyr Thr Phe
        2835                2840                2845

Gln Lys Glu Ile Thr Tyr Ser Cys Arg Glu Gly Phe Ile Leu Glu Gly
    2850                2855                2860

Ala Arg Ser Arg Ile Cys Leu Thr Asn Gly Ser Trp Ser Gly Ala Thr
2865                2870                2875                2880

Pro Ser Cys Met Pro Val Arg Cys Pro Ala Pro Pro Gln Val Pro Asn
                2885                2890                2895

Gly Val Ala Asp Gly Leu Asp Tyr Gly Phe Lys Lys Glu Val Ala Phe
            2900                2905                2910

His Cys Leu Glu Gly Tyr Val Leu Gln Gly Ala Pro Arg Leu Thr Cys
        2915                2920                2925

Gln Ser Asn Gly Thr Trp Asp Ala Glu Val Pro Val Cys Lys Pro Ala
    2930                2935                2940

Thr Cys Gly Pro Pro Ala Asp Leu Pro Gln Gly Phe Pro Asn Gly Phe
2945                2950                2955                2960

Ser Phe Tyr His Gly Gly His Ile Gln Tyr Gln Cys Phe Thr Gly Tyr
                2965                2970                2975

Lys Leu His Gly Asn Pro Ser Arg Arg Cys Leu Pro Asn Gly Ser Trp
            2980                2985                2990

Ser Gly Ser Ser Pro Ser Cys Leu Pro Cys Arg Cys Ser Thr Pro Ile
        2995                3000                3005

Ile Gln Gln Gly Thr Ile Asn Ala Thr Asp Leu Gly Cys Gly Lys Thr
    3010                3015                3020

Val Gln Ile Glu Cys Phe Lys Gly Phe Lys Leu Leu Gly Leu Ser Glu
3025                3030                3035                3040

Ile Thr Cys Asp Ala Asn Gly Gln Trp Ser Asp Val Pro Leu Cys Glu
                3045                3050                3055

His Ala Gln Cys Gly Pro Leu Pro Thr Ile Pro Asn Ala Ile Val Leu
            3060                3065                3070

Glu Gly Ser Leu Ser Glu Asp Asn Val Val Thr Tyr Ser Cys Arg Pro
        3075                3080                3085

Gly Tyr Thr Met Gln Gly Ser Ser Asp Leu Ile Cys Thr Glu Lys Ala
    3090                3095                3100

Ile Trp Ser Gln Pro Tyr Pro Thr Cys Glu Pro Leu Ser Cys Gly Pro
```

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3105                3110                3115                3120

Pro Pro Thr Val Ala Asn Ala Val Ala Thr Gly Glu Ala His Thr Tyr
                3125                3130                3135

Glu Ser Lys Val Lys Leu Arg Cys Leu Glu Gly Tyr Val Met Asp Ser
            3140                3145                3150

Asp Thr Asp Thr Phe Thr Cys Gln Gln Asp Gly His Trp Val Pro Glu
        3155                3160                3165

Arg Ile Thr Cys Ser Pro Lys Lys Cys Pro Val Pro Ser Asn Met Thr
    3170                3175                3180

Arg Ile Arg Phe His Gly Asp Asp Phe Gln Val Asn Arg Gln Val Ser
3185                3190                3195                3200

Val Ser Cys Ala Glu Gly Phe Thr His Glu Gly Val Asn Trp Ser Thr
                3205                3210                3215

Cys Gln Pro Asp Gly Thr Trp Glu Pro Pro Phe Ser Asp Glu Ser Cys
            3220                3225                3230

Ile Pro Val Val Cys Gly His Pro Glu Ser Pro Ala His Gly Ser Val
        3235                3240                3245

Val Gly Asn Lys His Ser Phe Gly Ser Thr Ile Val Tyr Gln Cys Asp
    3250                3255                3260

Pro Gly Tyr Lys Leu Glu Gly Asn Arg Glu Arg Ile Cys Gln Glu Asn
3265                3270                3275                3280

Arg Gln Trp Ser Gly Glu Val Ala Val Cys Arg Glu Asn Arg Cys Glu
                3285                3290                3295

Thr Pro Ala Glu Phe Pro Asn Gly Lys Ala Val Leu Glu Asn Thr Thr
            3300                3305                3310

Ser Gly Pro Ser Leu Leu Phe Ser Cys His Arg Gly Tyr Thr Leu Glu
        3315                3320                3325

Gly Ser Pro Glu Ala His Cys Thr Ala Asn Gly Thr Trp Asn His Leu
    3330                3335                3340

Thr Pro Leu Cys Lys Pro Asn Pro Cys Pro Val Pro Phe Val Ile Pro
3345                3350                3355                3360

Glu Asn Ala Val Leu Ser Glu Lys Glu Phe Tyr Val Asp Gln Asn Val
                3365                3370                3375

Ser Ile Lys Cys Arg Glu Gly Phe Leu Leu Lys Gly Asn Gly Val Ile
            3380                3385                3390

Thr Cys Ser Pro Asp Glu Thr Trp Thr His Thr Asn Ala Arg Cys Glu
        3395                3400                3405

Lys Ile Ser Cys Gly Pro Pro Ser His Val Glu Asn Ala Ile Ala Arg
    3410                3415                3420

Gly Val Tyr Tyr Gln Tyr Gly Asp Met Ile Thr Tyr Ser Cys Tyr Ser
3425                3430                3435                3440

Gly Tyr Met Leu Glu Gly Ser Leu Arg Ser Val Cys Leu Glu Asn Gly
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                3445                3450                3455

Thr Trp Thr Pro Ser Pro Val Cys Arg Ala Val Cys Arg Phe Pro Cys
            3460                3465                3470

Gln Asn Gly Gly Val Cys Gln Arg Pro Asn Ala Cys Ser Cys Pro Asp
        3475                3480                3485

Gly Trp Met Gly Arg Leu Cys Glu Glu Pro Ile Cys Ile Leu Pro Cys
    3490                3495                3500

Leu Asn Gly Gly Arg Cys Val Ala Pro Tyr Gln Cys Asp Cys Pro Thr
3505                3510                3515                3520

Gly Trp Thr Gly Ser Arg Cys His Thr Ala Thr Cys Gln Ser Pro Cys
                3525                3530                3535

Leu Asn Gly Gly Lys Cys Ile Arg Pro Asn Arg Cys His Cys Leu Ser
            3540                3545                3550

Ala Trp Thr Gly His Asp Cys Ser Arg Lys Arg Arg Ala Gly Leu
        3555                3560                3565


<210> 48
<211> 1316
<212> PRT
<213> Homo sapiens

<400> 48
Met Ala Ser Thr Pro Lys Glu Glu His Cys Tyr Leu Leu His Ser Phe
  1               5                  10                  15

Glu Glu Phe Glu Ala Leu Ala Arg Arg Ala Leu His Glu Asp Leu Pro
             20                  25                  30

Ser Gly Ser Phe Ile Gln Asp Asp Met Val His Cys Ser Tyr Leu Cys
         35                  40                  45

Asp Glu Gly Lys Asp Cys Cys Asp Arg Met Gly Ser Cys Lys Cys Gly
     50                  55                  60

Thr His Thr Gly His Phe Glu Cys Ile Cys Glu Lys Gly Tyr Tyr Gly
 65                  70                  75                  80

Lys Gly Leu Gln Tyr Glu Cys Thr Ala Cys Pro Ser Gly Thr Tyr Lys
                 85                  90                  95

Pro Glu Gly Ser Pro Gly Gly Ile Ser Ser Cys Ile Pro Cys Pro Asp
            100                 105                 110

Glu Asn His Thr Ser Pro Pro Gly Ser Thr Ser Pro Glu Asp Cys Val
        115                 120                 125

Cys Arg Glu Gly Tyr Arg Ala Ser Gly Gln Thr Cys Glu Leu Val His
    130                 135                 140

Cys Pro Ala Leu Lys Pro Pro Glu Asn Gly Tyr Phe Ile Gln Asn Thr
145                 150                 155                 160

Cys Asn Asn His Phe Asn Ala Ala Cys Gly Val Arg Cys His Pro Gly
                165                 170                 175
```

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Phe Asp Leu Val Gly Ser Ser Ile Ile Leu Cys Leu Pro Asn Gly Leu
            180                 185                 190

Trp Ser Gly Leu Glu Ser Tyr Cys Arg Val Arg Thr Cys Pro His Leu
        195                 200                 205

Arg Gln Pro Lys His Gly His Ile Ser Cys Ser Thr Arg Glu Met Leu
    210                 215                 220

Tyr Lys Thr Thr Cys Leu Val Ala Cys Asp Glu Gly Tyr Arg Leu Glu
225                 230                 235                 240

Gly Ser Asp Lys Leu Thr Cys Gln Gly Asn Ser Gln Trp Asp Gly Pro
                245                 250                 255

Glu Pro Arg Cys Val Glu Arg His Cys Ser Thr Phe Gln Met Pro Lys
            260                 265                 270

Asp Val Ile Ile Ser Pro His Asn Cys Gly Lys Gln Pro Ala Lys Phe
        275                 280                 285

Gly Thr Ile Cys Tyr Val Ser Cys Arg Gln Gly Phe Ile Leu Ser Gly
    290                 295                 300

Val Lys Glu Met Leu Arg Cys Thr Thr Ser Gly Lys Trp Asn Val Gly
305                 310                 315                 320

Val Gln Ala Ala Val Cys Lys Asp Val Glu Ala Pro Gln Ile Asn Cys
                325                 330                 335

Pro Lys Asp Ile Glu Ala Lys Thr Leu Glu Gln Gln Asp Ser Ala Asn
            340                 345                 350

Val Thr Trp Gln Ile Pro Thr Ala Lys Asp Asn Ser Gly Glu Lys Val
        355                 360                 365

Ser Val His Val His Pro Ala Phe Thr Pro Pro Tyr Leu Phe Pro Ile
    370                 375                 380

Gly Asp Val Ala Ile Val Tyr Thr Ala Thr Asp Leu Ser Gly Asn Gln
385                 390                 395                 400

Ala Ser Cys Ile Phe His Ile Lys Val Ile Asp Ala Glu Pro Pro Val
                405                 410                 415

Ile Asp Trp Cys Arg Ser Pro Pro Pro Val Gln Val Ser Glu Lys Val
            420                 425                 430

His Ala Ala Ser Trp Asp Glu Pro Gln Phe Ser Asp Asn Ser Gly Ala
        435                 440                 445

Glu Leu Val Ile Thr Arg Ser His Thr Gln Gly Asp Leu Phe Pro Gln
    450                 455                 460

Gly Glu Thr Ile Val Gln Tyr Thr Ala Thr Asp Pro Ser Gly Asn Asn
465                 470                 475                 480

Arg Thr Cys Asp Ile His Ile Val Ile Lys Gly Ser Pro Cys Glu Ile
                485                 490                 495

Pro Phe Thr Pro Val Asn Gly Asp Phe Ile Cys Thr Pro Asp Asn Thr
            500                 505                 510
```

```
Gly Val Asn Cys Thr Leu Thr Cys Leu Glu Gly Tyr Asp Phe Thr Glu
        515                 520                 525

Gly Ser Thr Asp Lys Tyr Tyr Cys Ala Tyr Glu Asp Gly Val Trp Lys
    530                 535                 540

Pro Thr Tyr Thr Thr Glu Trp Pro Asp Cys Ala Lys Lys Arg Phe Ala
545                 550                 555                 560

Asn His Gly Phe Lys Ser Phe Glu Met Phe Tyr Lys Ala Ala Arg Cys
                565                 570                 575

Asp Asp Thr Asp Leu Met Lys Lys Phe Ser Glu Ala Phe Glu Thr Thr
            580                 585                 590

Leu Gly Lys Met Val Pro Ser Phe Cys Ser Asp Ala Glu Asp Ile Asp
        595                 600                 605

Trp Arg Leu Glu Glu Asn Leu Thr Lys Lys Tyr Cys Leu Glu Tyr Asn
    610                 615                 620

Tyr Asp Tyr Glu Asn Gly Phe Ala Ile Gly Pro Gly Gly Trp Gly Ala
625                 630                 635                 640

Ala Asn Arg Leu Asp Tyr Ser Tyr Asp Asp Phe Leu Asp Thr Val Gln
                645                 650                 655

Glu Thr Ala Thr Ser Ile Gly Asn Ala Lys Ser Ser Arg Ile Lys Arg
            660                 665                 670

Ser Ala Pro Leu Ser Asp Tyr Lys Ile Lys Leu Ile Phe Asn Ile Thr
        675                 680                 685

Ala Ser Val Pro Leu Pro Asp Glu Arg Asn Asp Thr Leu Glu Trp Glu
    690                 695                 700

Asn Gln Gln Arg Leu Leu Gln Thr Leu Glu Thr Ile Thr Asn Lys Leu
705                 710                 715                 720

Lys Arg Thr Leu Asn Lys Asp Pro Met Tyr Ser Phe Gln Leu Ala Ser
                725                 730                 735

Glu Ile Leu Ile Ala Asp Ser Asn Ser Leu Gly Thr Lys Lys Ala Ser
            740                 745                 750

Pro Phe Cys Arg Pro Gly Ser Val Leu Arg Gly Arg Met Cys Val Asn
        755                 760                 765

Cys Pro Leu Gly Thr Tyr Tyr Asn Leu Glu His Phe Thr Cys Glu Ser
    770                 775                 780

Cys Arg Ile Gly Ser Tyr Gln Asp Glu Glu Gly Gln Leu Glu Cys Lys
785                 790                 795                 800

Leu Cys Pro Ser Gly Met Tyr Thr Glu Tyr Ile His Ser Arg Asn Ile
                805                 810                 815

Ser Asp Cys Lys Ala Gln Cys Lys Gln Gly Thr Tyr Ser Cys Ser Gly
            820                 825                 830

Leu Glu Thr Cys Glu Ser Cys Pro Leu Gly Thr Tyr Gln Pro Lys Phe
        835                 840                 845
```

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Gly Ser Arg Ser Cys Leu Ser Cys Pro Glu Asn Thr Ser Thr Val Lys
    850                 855                 860

Arg Gly Ala Val Asn Ile Ser Ala Cys Gly Val Pro Cys Pro Glu Gly
865                 870                 875                 880

Lys Phe Ser Arg Ser Gly Leu Met Pro Cys His Pro Cys Pro Arg Asp
                885                 890                 895

Tyr Tyr Gln Pro Asn Ala Gly Lys Ala Phe Cys Leu Ala Cys Pro Phe
            900                 905                 910

Tyr Gly Thr Thr Pro Phe Ala Gly Ser Arg Ser Ile Thr Glu Cys Ser
        915                 920                 925

Ser Phe Ser Ser Thr Phe Ser Ala Ala Glu Glu Ser Val Val Pro Pro
    930                 935                 940

Ala Ser Leu Gly His Ile Lys Lys Arg His Glu Ile Ser Ser Gln Val
945                 950                 955                 960

Phe His Glu Cys Phe Phe Asn Pro Cys His Asn Ser Gly Thr Cys Gln
                965                 970                 975

Gln Leu Gly Arg Gly Tyr Val Cys Leu Cys Pro Leu Gly Tyr Thr Gly
            980                 985                 990

Leu Lys Cys Glu Thr Asp Ile Asp Glu Cys Ser Pro Leu Pro Cys Leu
        995                1000                1005

Asn Asn Gly Val Cys Lys Asp Leu Val Gly Glu Phe Ile Cys Glu Cys
   1010                1015                1020

Pro Ser Gly Tyr Thr Gly Gln Arg Cys Glu Glu Asn Ile Asn Glu Cys
1025                1030                1035                1040

Ser Ser Ser Pro Cys Leu Asn Lys Gly Ile Cys Val Asp Gly Val Ala
                1045                1050                1055

Gly Tyr Arg Cys Thr Cys Val Lys Gly Phe Val Gly Leu His Cys Glu
            1060                1065                1070

Thr Glu Val Asn Glu Cys Gln Ser Asn Pro Cys Leu Asn Asn Ala Val
        1075                1080                1085

Cys Glu Asp Gln Val Gly Gly Phe Leu Cys Lys Cys Pro Pro Gly Phe
   1090                1095                1100

Leu Gly Thr Arg Cys Gly Lys Asn Val Asp Glu Cys Leu Ser Gln Pro
1105                1110                1115                1120

Cys Lys Asn Gly Ala Thr Cys Lys Asp Gly Ala Asn Ser Phe Arg Cys
                1125                1130                1135

Leu Cys Ala Ala Gly Phe Thr Gly Ser His Cys Glu Leu Asn Ile Asn
            1140                1145                1150

Glu Cys Gln Ser Asn Pro Cys Arg Asn Gln Ala Thr Cys Val Asp Glu
        1155                1160                1165

Leu Asn Ser Tyr Ser Cys Lys Cys Gln Pro Gly Phe Ser Gly Lys Arg
   1170                1175                1180
```

```
Cys Glu Thr Glu Gln Ser Thr Gly Phe Asn Leu Asp Phe Glu Val Ser
1185                1190                1195                1200

Gly Ile Tyr Gly Tyr Val Met Leu Val Gly Met Leu Pro Ser Leu His
                1205                1210                1215

Ala Leu Thr Cys Thr Phe Trp Met Lys Ser Ser Asp Asp Met Asn Tyr
            1220                1225                1230

Gly Thr Pro Ile Ser Tyr Ala Val Asp Asn Gly Ser Asp Asn Thr Leu
        1235                1240                1245

Leu Leu Thr Asp Tyr Asn Gly Trp Val Leu Tyr Val Asn Gly Arg Glu
    1250                1255                1260

Lys Ile Thr Asn Cys Pro Ser Val Asn Asp Gly Arg Trp His His Ile
1265                1270                1275                1280

Ala Ile Thr Trp Thr Ser Ala Asn Gly Ile Trp Lys Val Tyr Ile Asp
                1285                1290                1295

Gly Lys Leu Ser Asp Gly Gly Ala Gly Leu Ser Val Gly Leu Pro Ile
            1300                1305                1310

Pro Gly Met Phe
        1315


<210> 49
<211> 669
<212> PRT
<213> Mus musculus

<400> 49
Ala Asp Gly Leu Asp Tyr Gly Phe Lys Lys Glu Val Ala Phe His Cys
  1               5                  10                  15

Leu Glu Gly Tyr Val Leu Gln Gly Ala Pro Arg Leu Thr Cys Gln Ser
             20                  25                  30

Asn Gly Thr Trp Asp Ala Glu Val Pro Val Cys Lys Pro Ala Thr Cys
         35                  40                  45

Gly Pro Pro Ala Asp Leu Pro Gln Gly Phe Pro Asn Gly Phe Ser Phe
     50                  55                  60

Tyr His Gly Gly His Ile Gln Tyr Gln Cys Phe Thr Gly Tyr Lys Leu
 65                  70                  75                  80

His Gly Asn Pro Ser Arg Arg Cys Leu Pro Asn Gly Ser Trp Ser Gly
                 85                  90                  95

Ser Ser Pro Ser Cys Leu Pro Cys Arg Cys Ser Thr Pro Ile Ile Gln
            100                 105                 110

Gln Gly Thr Ile Asn Ala Thr Asp Leu Gly Cys Gly Lys Thr Val Gln
        115                 120                 125

Ile Glu Cys Phe Lys Gly Phe Lys Leu Leu Gly Leu Ser Glu Ile Thr
    130                 135                 140

Cys Asp Ala Asn Gly Gln Trp Ser Asp Val Pro Leu Cys Glu His Ala
145                 150                 155                 160
```

```
Gln Cys Gly Pro Leu Pro Thr Ile Pro Asn Ala Ile Val Leu Glu Gly
                165                 170                 175

Ser Leu Ser Glu Asp Asn Val Val Thr Tyr Ser Cys Arg Pro Gly Tyr
            180                 185                 190

Thr Met Gln Gly Ser Ser Asp Leu Ile Cys Thr Glu Lys Ala Ile Trp
        195                 200                 205

Ser Gln Pro Tyr Pro Thr Cys Glu Pro Leu Ser Cys Gly Pro Pro Pro
    210                 215                 220

Thr Val Ala Asn Ala Val Ala Thr Gly Glu Ala His Thr Tyr Glu Ser
225                 230                 235                 240

Lys Val Lys Leu Arg Cys Leu Glu Gly Tyr Val Met Asp Ser Asp Thr
                245                 250                 255

Asp Thr Phe Thr Cys Gln Gln Asp Gly His Trp Val Pro Glu Arg Ile
            260                 265                 270

Thr Cys Ser Pro Lys Lys Cys Pro Val Pro Ser Asn Met Thr Arg Ile
        275                 280                 285

Arg Phe His Gly Asp Asp Phe Gln Val Asn Arg Gln Val Ser Val Ser
    290                 295                 300

Cys Ala Glu Gly Phe Thr His Glu Gly Val Asn Trp Ser Thr Cys Gln
305                 310                 315                 320

Pro Asp Gly Thr Trp Glu Pro Pro Phe Ser Asp Glu Ser Cys Ile Pro
                325                 330                 335

Val Val Cys Gly His Pro Glu Ser Pro Ala His Gly Ser Val Val Gly
            340                 345                 350

Asn Lys His Ser Phe Gly Ser Thr Ile Val Tyr Gln Cys Asp Pro Gly
        355                 360                 365

Tyr Lys Leu Glu Gly Asn Arg Glu Arg Ile Cys Gln Glu Asn Arg Gln
    370                 375                 380

Trp Ser Gly Glu Val Ala Val Cys Arg Glu Asn Arg Cys Glu Thr Pro
385                 390                 395                 400

Ala Glu Phe Pro Asn Gly Lys Ala Val Leu Glu Asn Thr Thr Ser Gly
                405                 410                 415

Pro Ser Leu Leu Phe Ser Cys His Arg Gly Tyr Thr Leu Glu Gly Ser
            420                 425                 430

Pro Glu Ala His Cys Thr Ala Asn Gly Thr Trp Asn His Leu Thr Pro
        435                 440                 445

Leu Cys Lys Pro Asn Pro Cys Pro Val Pro Phe Val Ile Pro Glu Asn
    450                 455                 460

Ala Val Leu Ser Glu Lys Glu Phe Tyr Val Asp Gln Asn Val Ser Ile
465                 470                 475                 480

Lys Cys Arg Glu Gly Phe Leu Leu Lys Gly Asn Gly Val Ile Thr Cys
                485                 490                 495
```

```
Ser Pro Asp Glu Thr Trp Thr His Thr Asn Ala Arg Cys Glu Lys Ile
            500                 505                 510

Ser Cys Gly Pro Pro Ser His Val Glu Asn Ala Ile Ala Arg Gly Val
        515                 520                 525

Tyr Tyr Gln Tyr Gly Asp Met Ile Thr Tyr Ser Cys Tyr Ser Gly Tyr
    530                 535                 540

Met Leu Glu Gly Ser Leu Arg Ser Val Cys Leu Glu Asn Gly Thr Trp
545                 550                 555                 560

Thr Pro Ser Pro Val Cys Arg Ala Val Cys Arg Phe Pro Cys Gln Asn
                565                 570                 575

Gly Gly Val Cys Gln Arg Pro Asn Ala Cys Ser Cys Pro Asp Gly Trp
            580                 585                 590

Met Gly Arg Leu Cys Glu Glu Pro Ile Cys Ile Leu Pro Cys Leu Asn
        595                 600                 605

Gly Gly Arg Cys Val Ala Pro Tyr Gln Cys Asp Cys Pro Thr Gly Trp
    610                 615                 620

Thr Gly Ser Arg Cys His Thr Ala Thr Cys Gln Ser Pro Cys Leu Asn
625                 630                 635                 640

Gly Gly Lys Cys Ile Arg Pro Asn Arg Cys His Cys Leu Ser Ala Trp
                645                 650                 655

Thr Gly His Asp Cys Ser Arg Lys Arg Arg Ala Gly Leu
            660                 665


<210> 50
<211> 601
<212> PRT
<213> Mus musculus

<400> 50
His Ile Gln Tyr Gln Cys Phe Thr Gly Tyr Lys Leu His Gly Asn Pro
  1               5                  10                  15

Ser Arg Arg Cys Leu Pro Asn Gly Ser Trp Ser Gly Ser Ser Pro Ser
             20                  25                  30

Cys Leu Pro Cys Arg Cys Ser Thr Pro Ile Ile Gln Gln Gly Thr Ile
         35                  40                  45

Asn Ala Thr Asp Leu Gly Cys Gly Lys Thr Val Gln Ile Glu Cys Phe
     50                  55                  60

Lys Gly Phe Lys Leu Leu Gly Leu Ser Glu Ile Thr Cys Asp Ala Asn
 65                  70                  75                  80

Gly Gln Trp Ser Asp Val Pro Leu Cys Glu His Ala Gln Cys Gly Pro
                 85                  90                  95

Leu Pro Thr Ile Pro Asn Ala Ile Val Leu Glu Gly Ser Leu Ser Glu
            100                 105                 110

Asp Asn Val Val Thr Tyr Ser Cys Arg Pro Gly Tyr Thr Met Gln Gly
```

```
        115                 120                 125

Ser Ser Asp Leu Ile Cys Thr Glu Lys Ala Ile Trp Ser Gln Pro Tyr
    130                 135                 140

Pro Thr Cys Glu Pro Leu Ser Cys Gly Pro Pro Pro Thr Val Ala Asn
145                 150                 155                 160

Ala Val Ala Thr Gly Glu Ala His Thr Tyr Glu Ser Lys Val Lys Leu
                165                 170                 175

Lys Cys Leu Glu Gly Tyr Val Met Asp Ser Asp Thr Asp Thr Phe Thr
            180                 185                 190

Cys Gln Gln Asp Gly His Trp Val Pro Glu Arg Ile Thr Cys Ser Pro
        195                 200                 205

Lys Lys Cys Pro Val Pro Ser Asn Met Thr Arg Ile Arg Phe His Gly
    210                 215                 220

Asp Asp Phe Gln Val Asn Arg Gln Val Ser Val Ser Cys Ala Glu Gly
225                 230                 235                 240

Phe Thr His Glu Gly Val Asn Trp Ser Thr Cys Gln Pro Asp Gly Thr
                245                 250                 255

Trp Glu Pro Pro Phe Ser Asp Glu Ser Cys Ile Pro Val Val Cys Gly
            260                 265                 270

His Pro Glu Ser Pro Ala His Gly Ser Val Val Gly Asn Lys His Ser
        275                 280                 285

Phe Gly Ser Thr Ile Val Tyr Gln Cys Asp Pro Gly Tyr Lys Leu Glu
    290                 295                 300

Gly Asn Arg Glu Arg Ile Cys Gln Glu Asn Arg Gln Trp Ser Gly Glu
305                 310                 315                 320

Val Ala Val Cys Arg Glu Asn Arg Cys Glu Thr Pro Ala Glu Phe Pro
                325                 330                 335

Asn Gly Lys Ala Val Leu Glu Asn Thr Thr Ser Gly Pro Ser Leu Leu
            340                 345                 350

Phe Ser Cys His Arg Gly Tyr Thr Leu Glu Gly Ser Pro Glu Ala His
        355                 360                 365

Cys Thr Ala Asn Gly Thr Trp Asn His Leu Thr Pro Leu Cys Lys Pro
    370                 375                 380

Asn Pro Cys Pro Val Pro Phe Val Ile Pro Glu Asn Ala Val Leu Ser
385                 390                 395                 400

Glu Lys Glu Phe Tyr Val Asp Gln Asn Val Ser Ile Lys Cys Arg Glu
                405                 410                 415

Gly Phe Leu Leu Lys Gly Asn Gly Val Ile Thr Cys Ser Pro Asp Glu
            420                 425                 430

Thr Trp Thr His Thr Asn Ala Arg Cys Glu Lys Ile Ser Cys Gly Pro
        435                 440                 445

Pro Ser His Val Glu Asn Ala Ile Ala Arg Gly Val Tyr Tyr Gln Tyr
```

```
    450                 455                 460

Gly Asp Met Ile Thr Tyr Ser Cys Tyr Ser Gly Tyr Met Leu Glu Gly
465                 470                 475                 480

Ser Leu Arg Ser Val Cys Leu Glu Asn Gly Thr Trp Thr Pro Ser Pro
                485                 490                 495

Val Cys Arg Ala Val Cys Arg Phe Pro Cys Gln Asn Gly Gly Val Cys
            500                 505                 510

Gln Arg Pro Asn Ala Cys Ser Cys Pro Asp Gly Trp Met Gly Arg Leu
        515                 520                 525

Cys Glu Glu Pro Ile Cys Ile Leu Pro Cys Leu Asn Gly Gly Arg Cys
    530                 535                 540

Val Ala Pro Tyr Gln Cys Asp Cys Pro Thr Gly Trp Thr Gly Ser Arg
545                 550                 555                 560

Cys His Thr Ala Thr Cys Gln Ser Pro Cys Leu Asn Gly Gly Lys Cys
                565                 570                 575

Ile Arg Pro Asn Arg Cys His Cys Leu Ser Ala Trp Thr Gly His Asp
            580                 585                 590

Cys Ser Arg Lys Arg Arg Ala Gly Leu
        595                 600


<210> 51
<211> 481
<212> PRT
<213> Homo sapiens

<400> 51
Met Lys Gly Glu Asn Phe Glu Val Gly Ser Lys Val Gln Phe Phe Cys
  1               5                  10                  15

Asn Glu Gly Tyr Glu Leu Val Gly Asp Ser Ser Trp Thr Cys Gln Lys
             20                  25                  30

Ser Gly Lys Trp Asn Lys Lys Ser Asn Pro Lys Cys Met Pro Ala Lys
         35                  40                  45

Cys Pro Glu Pro Pro Leu Leu Glu Asn Gln Leu Val Leu Lys Glu Leu
     50                  55                  60

Thr Thr Glu Val Gly Val Val Thr Phe Ser Cys Lys Glu Gly His Val
 65                  70                  75                  80

Leu Gln Gly Pro Ser Val Leu Lys Cys Leu Pro Ser Gln Gln Trp Asn
                 85                  90                  95

Asp Ser Phe Pro Val Cys Lys Ile Val Leu Cys Thr Pro Pro Pro Leu
            100                 105                 110

Ile Ser Phe Gly Val Pro Ile Pro Ser Ser Ala Leu His Phe Gly Ser
        115                 120                 125

Thr Val Lys Tyr Ser Cys Val Gly Gly Phe Phe Leu Arg Gly Asn Ser
    130                 135                 140
```

```
Thr Thr Leu Cys Gln Pro Asp Gly Thr Trp Ser Ser Pro Leu Pro Glu
145                 150                 155                 160

Cys Val Pro Val Glu Cys Pro Gln Pro Glu Glu Ile Pro Asn Gly Ile
                165                 170                 175

Ile Asp Val Gln Gly Leu Ala Tyr Leu Ser Thr Ala Leu Tyr Thr Cys
            180                 185                 190

Lys Pro Gly Phe Glu Leu Val Gly Asn Thr Thr Thr Leu Cys Gly Glu
        195                 200                 205

Asn Gly His Trp Leu Gly Gly Lys Pro Thr Cys Lys Ala Ile Glu Cys
    210                 215                 220

Leu Lys Pro Lys Glu Ile Leu Asn Gly Lys Phe Ser Tyr Thr Asp Leu
225                 230                 235                 240

His Tyr Gly Gln Thr Val Thr Tyr Ser Cys Asn Arg Gly Phe Arg Leu
                245                 250                 255

Glu Gly Pro Ser Ala Leu Thr Cys Leu Glu Thr Gly Asp Trp Asp Val
            260                 265                 270

Asp Ala Pro Ser Cys Asn Ala Ile His Cys Asp Ser Pro Gln Pro Ile
        275                 280                 285

Glu Asn Gly Phe Val Glu Gly Ala Asp Tyr Ser Tyr Gly Ala Ile Ile
    290                 295                 300

Ile Tyr Ser Cys Phe Pro Gly Phe Gln Val Ala Gly His Ala Met Gln
305                 310                 315                 320

Thr Cys Glu Glu Ser Gly Trp Ser Ser Ser Ile Pro Thr Cys Met Pro
                325                 330                 335

Ile Asp Cys Gly Leu Pro Pro His Ile Asp Phe Gly Ala Cys Thr Lys
            340                 345                 350

Leu Lys Asp Ala Arg Asp Ile Leu Ser Lys Lys Arg His Asp Gly Ser
        355                 360                 365

Ser Ile Cys Asp Ser Ser Pro Ser Leu Ser Phe Gly Ala Val Ala Lys
    370                 375                 380

Thr Trp Glu Asn Thr Lys Glu Ser Pro Ala Thr His Ser Ser Asn Phe
385                 390                 395                 400

Leu Tyr Gly Thr Met Val Ser Tyr Thr Cys Asn Pro Gly Tyr Glu Leu
                405                 410                 415

Leu Gly Asn Pro Val Leu Ile Cys Gln Glu Asp Gly Thr Trp Asn Gly
            420                 425                 430

Ser Ala Pro Ser Cys Ile Ser Ile Glu Cys Asp Leu Pro Thr Ala Pro
        435                 440                 445

Glu Asn Gly Phe Leu Arg Phe Thr Glu Thr Ser Met Gly Ser Ala Val
    450                 455                 460

Gln Tyr Ser Cys Lys Pro Gly His Ile Leu Ala Gly Ser Asp Leu Arg
465                 470                 475                 480
```

Leu

<210> 52
<211> 200
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Von Willebrand Factor Type A domain sequence

<400> 52
Asp Ile Val Phe Leu Leu Asp Gly Ser Gly Ser Ile Gly Ser Gln Asn
1 5 10 15

Phe Glu Arg Val Lys Asp Phe Val Glu Arg Val Val Glu Arg Leu Asp
20 25 30

Val Gly Pro Arg Asp Lys Lys Glu Glu Asp Ala Val Arg Val Gly Leu
35 40 45

Val Gln Tyr Ser Asp Asn Val Arg Thr Glu Ile Lys Phe Lys Leu Asn
50 55 60

Asp Tyr Gln Asn Lys Asp Glu Val Leu Gln Ala Leu Gln Lys Ile Arg
65 70 75 80

Tyr Glu Asp Tyr Tyr Gly Gly Gly Gly Thr Asn Thr Gly Ala Ala Leu
85 90 95

Gln Tyr Val Val Arg Asn Leu Phe Thr Glu Ala Ser Gly Ser Arg Ile
100 105 110

Glu Pro Val Ala Glu Glu Gly Ala Pro Lys Val Leu Val Val Leu Thr
115 120 125

Asp Gly Arg Ser Gln Asp Asp Pro Ser Pro Thr Ile Asp Ile Arg Asp
130 135 140

Val Leu Asn Glu Leu Lys Lys Glu Ala Gly Val Glu Val Phe Ala Ile
145 150 155 160

Gly Val Gly Asn Ala Asp Asn Asn Asn Leu Glu Glu Leu Arg Glu Ile
165 170 175

Ala Ser Lys Pro Asp Asp His Val Phe Lys Val Ser Asp Phe Glu Ala
180 185 190

Leu Asp Thr Leu Gln Glu Leu Leu
195 200

<210> 53
<211> 147
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Pentaxin domain sequence

<400> 53
Ser Tyr Ala Thr Lys Lys Pro Leu Lys Asp Asn Glu Leu Leu Ile Phe
1 5 10 15

Lys Glu Lys Asp Gly Gln Tyr Ser Leu Tyr Val Gly Gly Ala Pro Gln
20 25 30

Leu Glu Val Thr Phe Lys Val Lys Glu Glu Phe Val Ala Pro Val His
35 40 45

Ile Cys Thr Ser Trp Glu Ser Ser Ser Gly Ile Ala Glu Phe Trp Val
50 55 60

Asp Gly Lys His Cys Pro Trp Val Arg Lys Gly Leu Lys Lys Gly Tyr
65 70 75 80

Thr Val Gly Ala Glu Pro Ser Ile Ile Leu Gly Gln Glu Gln Asp Ser
85 90 95

Tyr Gly Gly Gly Phe Asp Lys Ser Gln Ser Leu Val Gly Glu Ile Gly
100 105 110

Asp Leu Asn Met Trp Asp Tyr Val Leu Thr Pro Glu Glu Ile Lys Thr
115 120 125

Val Tyr Lys Gly Ala Gly Pro Leu Glu Arg His Ile Tyr Pro Asn Ile
130 135 140

Leu Asp Trp
145

<210> 54
<211> 62
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Sushi domain sequence

<400> 54
Cys Pro Pro Pro Asp Ile Glu Asn Gly Arg Val Ser Ser Ser Gly Thr
1 5 10 15

Tyr Glu Tyr Pro Val Gly Asp Thr Val Thr Tyr Thr Cys Asn Glu Gly
20 25 30

Tyr Arg Leu Val Gly Ser Ser Ser Ile Thr Cys Thr Glu Asp Gly Gly
35 40 45

Gly Gly Trp Ser Pro Pro Leu Leu Gly Glu Leu Pro Lys Cys
50 55 60

<210> 55
<211> 207
<212> PRT
<213> Homo sapiens

<400> 55
Met Gly Ser Cys Ser Gly Arg Cys Ala Leu Val Val Leu Cys Ala Phe
1 5 10 15

```
Gln Leu Val Ala Ala Leu Glu Arg Gln Val Phe Asp Phe Leu Gly Tyr
            20                  25                  30

Gln Trp Ala Pro Ile Leu Ala Asn Phe Val His Ile Ile Ile Val Ile
        35                  40                  45

Leu Gly Leu Phe Gly Thr Ile Gln Tyr Arg Leu Arg Tyr Val Met Tyr
    50                  55                  60

Thr Leu Trp Ala Ala Val Trp Val Thr Trp Asn Val Phe Ile Ile Cys
65                  70                  75                  80

Phe Tyr Leu Glu Val Gly Gly Leu Leu Lys Asp Ser Glu Leu Leu Thr
                85                  90                  95

Phe Ser Leu Ser Arg His Arg Ser Trp Trp Arg Glu Arg Trp Pro Gly
            100                 105                 110

Cys Leu His Glu Glu Val Pro Ala Val Gly Leu Gly Ala Pro His Gly
        115                 120                 125

Gln Ala Leu Val Ser Gly Ala Gly Cys Ala Leu Glu Pro Ser Tyr Val
    130                 135                 140

Glu Ala Leu His Ser Cys Leu Gln Ile Leu Ile Ala Leu Leu Gly Phe
145                 150                 155                 160

Val Cys Gly Cys Gln Val Val Ser Val Phe Thr Glu Glu Glu Asp Ser
                165                 170                 175

Phe Asp Phe Ile Gly Gly Phe Asp Pro Phe Pro Leu Tyr His Val Asn
            180                 185                 190

Glu Lys Pro Ser Ser Leu Leu Ser Lys Gln Val Tyr Leu Pro Ala
        195                 200                 205


<210> 56
<211> 208
<212> PRT
<213> Mus musculus

<400> 56
Met Gly Phe Cys Ser Gly Arg Cys Thr Leu Leu Ala Leu Cys Ala Leu
  1               5                  10                  15

Gln Leu Val Thr Ala Leu Glu Arg Gln Val Phe Asp Phe Leu Gly Tyr
            20                  25                  30

Gln Trp Ala Pro Ile Leu Ala Asn Phe Thr His Ile Ile Val Val Ile
        35                  40                  45

Leu Gly Leu Phe Gly Thr Ile Gln Tyr Arg Pro Arg Tyr Ile Val Val
    50                  55                  60

Tyr Val Val Trp Ala Ala Val Trp Val Thr Trp Asn Val Phe Ile Ile
65                  70                  75                  80

Cys Phe Tyr Leu Glu Val Gly Gly Leu Ser Lys Asp Ser Glu Leu Leu
                85                  90                  95

Thr Phe Asn Leu Ser Gly His Arg Ser Trp Trp Glu Glu His Gly Pro
```

```
            100                 105                 110

Gly Cys Leu His Glu Glu Glu Ala Thr Ala Gly Leu Gly Ala Leu His
        115                 120                 125

Gly Gln Ser Leu Val Val Gly Ala Gly Cys Ala Met Val His Ser Tyr
    130                 135                 140

Val Glu Ala Leu His Ser Gly Leu Gln Ile Leu Leu Ala Leu Leu Gly
145                 150                 155                 160

Phe Val Tyr Gly Cys Tyr Val Val Ser Val Leu Thr Glu Glu Glu Asp
                165                 170                 175

Ser Phe Asp Phe Ile Gly Gly Phe Asp Pro Phe Pro Leu Tyr His Val
            180                 185                 190

Asn Glu Lys Pro Ser Ser Leu Leu Ser Lys Gln Ala Tyr Leu Pro Ala
        195                 200                 205
```

<210> 57
<211> 208
<212> PRT
<213> Mus musculus

<400> 57

```
Met Gly Phe Cys Ser Gly Arg Cys Thr Leu Leu Ala Leu Cys Arg Leu
  1               5                  10                  15

Gln Leu Val Thr Ala Leu Glu Arg Gln Val Phe Asp Phe Leu Gly Tyr
             20                  25                  30

Gln Trp Ala Pro Ile Leu Ala Asn Phe Thr His Ile Ile Val Val Ile
         35                  40                  45

Leu Gly Leu Phe Gly Thr Ile Gln Tyr Arg Pro Arg Tyr Ile Val Val
     50                  55                  60

Tyr Val Val Trp Ala Ala Val Trp Val Thr Trp Asn Val Phe Ile Ile
 65                  70                  75                  80

Cys Phe Tyr Leu Glu Val Gly Gly Leu Ser Lys Asp Ser Glu Leu Leu
                 85                  90                  95

Thr Phe Asn Leu Ser Gly His Arg Ser Trp Trp Glu Glu His Gly Pro
            100                 105                 110

Gly Cys Leu His Glu Glu Glu Ala Thr Ala Gly Leu Gly Ala Leu His
        115                 120                 125

Gly Gln Ser Leu Val Val Gly Ala Gly Cys Ala Met Val His Ser Tyr
    130                 135                 140

Val Glu Ala Leu His Ser Gly Leu Gln Ile Leu Leu Ala Leu Leu Gly
145                 150                 155                 160

Phe Val Tyr Gly Cys Tyr Val Val Ser Val Leu Thr Glu Glu Glu Asp
                165                 170                 175
```

```
Ser Phe Asp Phe Ile Gly Gly Phe Asp Pro Phe Pro Leu Tyr His Val
            180                 185                 190

Asn Glu Lys Pro Ser Ser Leu Leu Ser Lys Gln Ala Tyr Leu Pro Ala
        195                 200                 205
```

<210> 58
<211> 208
<212> PRT
<213> Mus musculus

<400> 58

```
Met Gly Phe Cys Ser Gly Arg Cys Thr Leu Leu Ala Leu Cys Ala Leu
  1               5                  10                  15

Gln Leu Val Thr Ala Leu Glu Arg Gln Val Phe Asp Phe Leu Gly Tyr
             20                  25                  30

Gln Trp Ala Pro Ile Leu Ala Asn Phe Thr His Ile Ile Val Val Ile
         35                  40                  45

Leu Gly Leu Phe Gly Thr Ile Gln Tyr Arg Pro Arg Tyr Ile Val Val
     50                  55                  60

Tyr Val Val Trp Ala Ala Val Trp Val Thr Trp Asn Val Phe Ile Ile
 65                  70                  75                  80

Cys Phe Tyr Leu Glu Val Gly Gly Leu Ser Lys Asp Ser Glu Leu Leu
                 85                  90                  95

Thr Phe Asn Leu Ser Gly His Arg Ser Trp Trp Glu Glu His Gly Pro
            100                 105                 110

Gly Cys Leu His Glu Glu Glu Ala Thr Ala Gly Leu Gly Ala Leu His
        115                 120                 125

Gly Gln Ser Leu Val Val Gly Ala Gly Cys Ala Met Val His Ser Tyr
    130                 135                 140

Val Glu Ala Leu His Ser Gly Leu Gln Ile Leu Leu Ala Leu Leu Gly
145                 150                 155                 160

Phe Val Tyr Gly Cys Tyr Val Val Arg Val Leu Thr Glu Glu Glu Asp
                165                 170                 175

Ser Phe Asp Phe Ile Gly Gly Phe Asp Pro Phe Pro Leu Tyr His Val
            180                 185                 190

Asn Glu Lys Pro Ser Ser Leu Leu Ser Lys Gln Ala Tyr Leu Pro Ala
        195                 200                 205
```

<210> 59
<211> 207
<212> PRT
<213> Mus musculus

<400> 59
Met Gly Lys Cys Ser Gly Arg Cys Thr Leu Val Ala Phe Cys Cys Leu
1 5 10 15

Gln Leu Val Ala Ala Leu Gln Arg Gln Ile Phe Asp Phe Leu Gly Tyr
20 25 30

Gln Trp Ala Pro Ile Leu Ala Asn Phe Leu His Ile Met Ala Val Ile
35 40 45

Leu Gly Ile Phe Gly Thr Val Gln Tyr Arg Ser Arg Tyr Leu Ile Leu
50 55 60

Tyr Ala Ala Trp Leu Val Leu Trp Val Gly Trp Asn Ala Phe Ile Ile
65 70 75 80

Cys Phe Tyr Leu Glu Val Gly Gln Leu Ser Gln Asp Arg Asp Phe Ile
85 90 95

Met Thr Phe Asn Thr Ser Leu His Arg Ser Trp Trp Met Glu Asn Gly
100 105 110

Pro Gly Cys Leu Val Thr Pro Val Leu Asn Ser Arg Leu Ala Leu Glu
115 120 125

Asp His His Val Ile Ser Val Thr Gly Cys Leu Leu Asp Tyr Pro Tyr
130 135 140

Ile Glu Ala Leu Ser Ser Ala Leu Gln Ile Phe Leu Ala Leu Phe Gly
145 150 155 160

Phe Val Phe Ala Cys Tyr Val Ser Lys Val Phe Leu Glu Glu Glu Asp
165 170 175

Ser Phe Asp Phe Ile Gly Gly Phe Asp Ser Tyr Gly Tyr Gln Ala Pro
180 185 190

Gln Lys Thr Ser His Leu Gln Leu Gln Pro Leu Tyr Thr Ser Gly
195 200 205

<210> 60
<211> 367
<212> PRT
<213> Mus musculus

<400> 60
Met Trp Gly Ser Arg Ala Gln Gln Ser Gly Pro Asp Arg Gly Gly Ala
1 5 10 15

Cys Leu Leu Ala Ala Phe Leu Leu Cys Phe Ser Leu Leu His Ala Gln
20 25 30

Asp Tyr Thr Pro Ser Gln Thr Pro Pro Pro Thr Ser Asn Thr Ser Leu
35 40 45

Lys Pro Arg Gly Arg Val Gln Lys Glu Leu Cys Gly Lys Thr Lys Phe
50 55 60

Gln Gly Lys Ile Tyr Gly Gly Gln Ile Ala Lys Ala Glu Arg Trp Pro
65 70 75 80

```
Trp Gln Ala Ser Leu Ile Phe Arg Gly Arg His Ile Cys Gly Ala Val
                 85                  90                  95

Leu Ile Asp Lys Thr Trp Leu Leu Ser Ala Ala His Cys Phe Gln Arg
            100                 105                 110

Ser Leu Thr Pro Ser Asp Tyr Arg Ile Leu Leu Gly Tyr Asn Gln Leu
        115                 120                 125

Ser Asn Pro Ser Asn Tyr Ser Arg Gln Met Thr Val Asn Lys Val Ile
    130                 135                 140

Leu His Glu Asp Tyr Ser Lys Leu Ser Arg Leu Glu Lys Asn Ile Val
145                 150                 155                 160

Leu Ile Gln Leu His His Pro Val Ile Tyr Ser Thr His Ile Phe Pro
                165                 170                 175

Ala Cys Val Pro Asp Gly Thr Thr Lys Val Ser Pro Asn Asn Leu Cys
            180                 185                 190

Trp Ile Ser Gly Trp Gly Met Leu Ser Ala Asp Lys Phe Leu Gln Ala
        195                 200                 205

Pro Phe Pro Leu Leu Asp Ala Glu Val Ser Leu Ile Asp Glu Glu Glu
    210                 215                 220

Cys Thr Thr Phe Phe Gln Thr Pro Glu Val Ser Ile Thr Glu Tyr Asp
225                 230                 235                 240

Val Ile Lys Asp Asp Val Leu Cys Ala Gly Asp Leu Thr Asn Gln Lys
                245                 250                 255

Ser Ser Cys Arg Gly Asp Ser Gly Gly Pro Leu Val Cys Phe Leu Asn
            260                 265                 270

Ser Phe Trp Tyr Val Val Gly Leu Ala Asn Trp Asn Gly Ala Cys Leu
        275                 280                 285

Glu Pro Ile His Ser Pro Asn Ile Phe Thr Lys Val Ser Tyr Phe Ser
    290                 295                 300

Asp Trp Ile Lys Gln Lys Lys Ala Asn Thr Pro Ala Ala Asp Val Ser
305                 310                 315                 320

Ser Ala Pro Leu Glu Glu Met Ala Ser Ser Leu Arg Gly Trp Gly Asn
                325                 330                 335

Tyr Ser Ala Gly Ile Thr Leu Lys Pro Arg Ile Ser Thr Thr Leu Leu
            340                 345                 350

Ser Ser Gln Ala Leu Leu Leu Gln Ser Ile Trp Leu Arg Ile Leu
        355                 360                 365


<210> 61
<211> 366
<212> PRT
<213> Mus musculus

<400> 61
Met Cys Gly Val Arg Ala Lys Lys Ser Gly Leu Ser Gly Tyr Gly Ala
  1               5                  10                  15
```

```
Gly Leu Leu Ala Ala Leu Leu Gly Val Ser Phe Leu Ser Gln His Ala
            20                  25                  30

Gln Thr Ala Glu Pro Thr Asn Val Thr Asn Ala Ala Asn Asn Thr Thr
        35                  40                  45

Ile Gln Ile Met Lys Ser Thr Leu Ser Leu Ser Glu Val Cys Gly Lys
    50                  55                  60

Thr Lys Phe Gln Gly Lys Ile Tyr Gly Gly Gln Ile Ala Gly Ala Glu
65                  70                  75                  80

Arg Trp Pro Trp Gln Ala Ser Leu Arg Leu Tyr Gly Arg His Ile Cys
                85                  90                  95

Gly Ala Val Leu Ile Asp Lys Asn Trp Val Leu Gly Ala Ala His Cys
            100                 105                 110

Phe Gln Arg Ser Gln Glu Pro Ser Asp Tyr His Val Met Leu Gly Tyr
        115                 120                 125

Thr Asp Leu Asn Ser Pro Thr Arg Tyr Ser Arg Thr Met Ser Val Gln
    130                 135                 140

Lys Val Ile Val His Lys Asp Tyr Asn Arg Phe His Thr Gln Gly Ser
145                 150                 155                 160

Asp Ile Val Leu Leu Gln Leu Arg Ser Ser Val Glu Tyr Ser Ser His
                165                 170                 175

Ile Leu Pro Ala Cys Val Pro Glu Glu Asn Ile Lys Ile Pro Lys Glu
            180                 185                 190

Lys Ala Cys Trp Ala Ser Gly Trp Gly Tyr Leu Arg Glu Asp Val Arg
        195                 200                 205

Ile Pro Leu Pro Asn Glu Leu Tyr Glu Ala Glu Leu Ile Ile Met Ser
    210                 215                 220

Asn Asp Gln Cys Lys Gly Phe Phe Pro Pro Pro Val Pro Gly Ser Ser
225                 230                 235                 240

Arg Ser Tyr Tyr Ile Tyr Asp Asp Met Val Cys Ala Ala Asp Tyr Asp
                245                 250                 255

Met Ser Lys Ser Ile Cys Ala Gly Asp Ser Gly Gly Pro Leu Val Cys
            260                 265                 270

Leu Leu Glu Gly Ser Trp Tyr Val Val Gly Leu Thr Ser Trp Ser Ser
        275                 280                 285

Thr Cys Glu Glu Pro Ile Val Ser Pro Ser Val Phe Ala Arg Val Ser
    290                 295                 300

Tyr Phe Asp Lys Trp Ile Lys Asp Asn Lys Lys Ser Ser Ser Asn Ser
305                 310                 315                 320

Lys Pro Gly Glu Ser Pro His His Pro Gly Ser Pro Glu Asn Glu Asn
                325                 330                 335

Pro Glu Gly Asn Asn Lys Asn Gln Gly Thr Val Ile Lys Pro Val Cys
            340                 345                 350
```

```
Thr Ala Leu Leu Leu Ser Gln Thr Leu Leu Gln Gln Leu Ile
        355                 360                 365


<210> 62
<211> 143
<212> PRT
<213> Mus musculus

<400> 62
Met Leu Gly Tyr Thr Asp Leu Asn Ser Pro Thr Arg Tyr Ser Arg Thr
  1               5                  10                  15

Met Ser Val Gln Lys Val Ile Val His Lys Asp Tyr Asn Arg Phe His
             20                  25                  30

Thr Gln Gly Ser Asp Ile Val Leu Leu Gln Leu Arg Ser Ser Val Glu
         35                  40                  45

Tyr Ser Ser His Ile Leu Pro Ala Cys Val Pro Glu Glu Asn Ile Lys
     50                  55                  60

Ile Pro Lys Glu Lys Ala Cys Trp Ala Ser Gly Trp Gly Tyr Leu Arg
 65                  70                  75                  80

Glu Asp Val Arg Ile Pro Leu Pro Asn Glu Leu Tyr Glu Ala Glu Leu
                 85                  90                  95

Ile Ile Met Ser Asn Asp Gln Cys Lys Gly Phe Phe Pro Pro Pro Val
            100                 105                 110

Pro Gly Ser Gly Arg Ser Tyr Tyr Ile Tyr Asp Asp Met Val Cys Ala
        115                 120                 125

Ala Asp Tyr Asp Met Ser Lys Ser Ile Cys Ala Gly Leu Leu Leu
    130                 135                 140


<210> 63
<211> 273
<212> PRT
<213> Ovis aries

<400> 63
Met Leu His Leu Leu Ala Leu Ala Leu Leu Leu Ser Leu Val Ser Ala
  1               5                  10                  15

Ala Pro Ala Pro Gly Gln Ala Leu Gln Arg Ser Gly Ile Ile Gly Gly
             20                  25                  30

Lys Glu Ala Pro Gly Ser Arg Trp Pro Trp Gln Val Ser Leu Arg Val
         35                  40                  45

Arg Asp Gln Tyr Trp Arg His Gln Cys Gly Gly Ser Leu Ile His Pro
     50                  55                  60

Gln Trp Val Leu Thr Ala Ala His Cys Ile Gly Pro Glu Leu Gln Glu
 65                  70                  75                  80

Pro Ser Asp Phe Arg Val Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln
                 85                  90                  95
```

```
Asp Arg Leu Leu Pro Ile Ser Arg Val Ile Pro His Pro His Tyr Tyr
            100                 105                 110

Met Val Glu Asn Gly Ala Asp Ile Ala Leu Leu Gln Leu Glu Glu Pro
        115                 120                 125

Val Ser Ile Ser Arg His Val Gln Pro Val Thr Leu Pro Pro Ala Ser
    130                 135                 140

Glu Thr Phe Pro Pro Glu Ser Gln Cys Trp Val Thr Gly Trp Gly Asp
145                 150                 155                 160

Val Asp Asn Gly Arg Pro Leu Pro Pro Pro Tyr Pro Leu Lys Gln Val
                165                 170                 175

Lys Val Pro Ile Val Glu Asn Ser Val Cys Asp Trp Lys Tyr His Ser
            180                 185                 190

Gly Leu Ser Thr Asp Tyr Ser Val Pro Ile Val Gln Glu Asp Asn Leu
        195                 200                 205

Cys Ala Gly Asp Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly
    210                 215                 220

Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly Val Val
225                 230                 235                 240

Ser Trp Gly Asp Gly Cys Ala Lys Pro Asn Arg Pro Gly Ile Tyr Thr
                245                 250                 255

Arg Ile Thr Ser Tyr Leu Asp Trp Ile His Gln Tyr Val Pro Gln Glu
            260                 265                 270

Pro
```

<210> 64
<211> 273
<212> PRT
<213> Ovis aries

<400> 64

```
Met Leu His Leu Leu Ala Leu Ala Leu Leu Leu Ser Leu Val Ser Ala
  1               5                  10                  15

Ala Pro Gly Pro Gly Gln Ala Leu Gln Arg Ser Gly Ile Ile Gly Gly
             20                  25                  30

Lys Glu Ala Pro Gly Ser Arg Trp Pro Trp Gln Val Ser Leu Arg Val
         35                  40                  45

Arg Asp Gln Tyr Trp Arg His Gln Cys Gly Gly Ser Leu Ile His Pro
     50                  55                  60

Gln Trp Val Leu Thr Ala Ala His Cys Ile Gly Pro Glu Leu Gln Glu
 65                  70                  75                  80

Pro Ser Asp Phe Arg Val Gln Leu Arg Glu Gln His Leu Tyr Tyr Gln
                 85                  90                  95

Asp Arg Leu Leu Pro Ile Ser Arg Val Ile Pro His Pro His Tyr Tyr
            100                 105                 110
```

```
Met Val Glu Asn Gly Ala Asp Ile Ala Leu Leu Gln Leu Glu Glu Pro
        115                 120                 125

Val Ser Ile Ser Cys His Val Arg Pro Val Thr Leu Pro Pro Ala Ser
    130                 135                 140

Glu Thr Phe Pro Pro Gly Ser Gln Cys Trp Val Thr Gly Trp Gly Asn
145                 150                 155                 160

Val Asp Asn Gly Arg Pro Leu Pro Pro Pro Tyr Pro Leu Lys Gln Val
                165                 170                 175

Lys Val Pro Ile Val Glu Asn Ser Val Cys Asp Trp Lys Tyr His Ser
            180                 185                 190

Gly Leu Ser Thr Asp Tyr Ser Val Pro Ile Val Gln Glu Asp Asn Leu
        195                 200                 205

Cys Ala Gly Asp Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly
    210                 215                 220

Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly Val Val
225                 230                 235                 240

Ser Trp Gly Asp Gly Cys Ala Asn Pro Asp Tyr Pro Gly Val Tyr Thr
                245                 250                 255

Arg Ile Thr Ser Tyr Leu Asp Trp Ile His Gln Tyr Val Pro Gln Glu
            260                 265                 270

Pro
```

<210> 65
<211> 205
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Trypsin
Domian sequence

<400> 65

```
Ser Ala Pro Ala Ser Ser Val Arg Val Ser Leu Ser Val Arg Leu Gly
  1               5                  10                  15

Glu His Asn Leu Ser Leu Thr Glu Gly Thr Glu Gln Lys Phe Asp Val
             20                  25                  30

Lys Lys Thr Ile Ile Val His Pro Asn Tyr Asn Pro Asp Thr Leu Asp
         35                  40                  45

Asn Gly Ala Tyr Asp Asn Asp Ile Ala Leu Leu Lys Leu Lys Ser Pro
     50                  55                  60

Gly Val Thr Leu Gly Asp Thr Val Arg Pro Ile Cys Leu Pro Ser Ala
 65                  70                  75                  80

Ser Ser Asp Leu Pro Val Gly Thr Thr Cys Thr Val Ser Gly Trp Gly
                 85                  90                  95
```

```
Arg Arg Pro Thr Lys Asn Leu Gly Leu Ser Asp Thr Leu Gln Glu Val
            100                 105                 110

Val Val Pro Val Val Ser Arg Glu Thr Cys Arg Ser Ala Tyr Glu Tyr
        115                 120                 125

Gly Gly Thr Asp Asp Lys Val Glu Phe Val Thr Asp Asn Met Ile Cys
    130                 135                 140

Ala Gly Ala Leu Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly
145                 150                 155                 160

Pro Leu Val Cys Ser Asp Gly Asn Arg Asp Gly Arg Trp Glu Leu Val
                165                 170                 175

Gly Ile Val Ser Trp Gly Ser Tyr Gly Cys Ala Arg Gly Asn Lys Pro
            180                 185                 190

Gly Val Tyr Thr Arg Val Ser Ser Tyr Leu Asp Trp Ile
        195                 200                 205


<210> 66
<211> 349
<212> PRT
<213> Homo sapiens

<400> 66
Met Asn Arg Lys Ala Leu Arg Cys Leu Gly His Leu Phe Leu Ser Leu
  1               5                  10                  15

Gly Met Val Cys Leu Arg Ile Gly Gly Phe Ser Ser Val Val Ala Leu
             20                  25                  30

Gly Ala Thr Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
         35                  40                  45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
     50                  55                  60

Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe Arg Asn Gly
 65                  70                  75                  80

Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
                 85                  90                  95

Leu Lys Val Gly Ser Arg Asp Gly Ala Phe Thr Tyr Ala Ile Ile Ala
            100                 105                 110

Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr His Gly Asn Leu
        115                 120                 125

Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Arg Asp
    130                 135                 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
145                 150                 155                 160

Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys Gln Asn Ala
                165                 170                 175

Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Ile Leu
            180                 185                 190
```

```
Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
        195                 200                 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Gln Phe Arg Glu Leu
    210                 215                 220

Gly Tyr Val Leu Lys Asp Lys Tyr Asn Glu Ala Val His Val Glu Pro
225                 230                 235                 240

Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys Ile Lys Lys
                245                 250                 255

Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val Tyr Ile Glu
            260                 265                 270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
        275                 280                 285

Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala Ser Gly Cys
    290                 295                 300

Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ala Arg
305                 310                 315                 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
                325                 330                 335

Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
            340                 345


<210> 67
<211> 349
<212> PRT
<213> Homo sapiens

<400> 67
Met Asn Arg Lys Ala Arg Arg Cys Leu Gly His Leu Phe Leu Ser Leu
  1               5                  10                  15

Gly Met Val Tyr Leu Arg Ile Gly Gly Phe Ser Ser Val Val Ala Leu
            20                  25                  30

Gly Ala Ser Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
        35                  40                  45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
    50                  55                  60

Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe Arg Asn Gly
65                  70                  75                  80

Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
                85                  90                  95

Leu Lys Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala Ile Ile Ala
            100                 105                 110

Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr Gln Gly Asn Leu
        115                 120                 125

Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Arg Asp
```

```
    130                 135                 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
145                 150                 155                 160

Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys Gln Asn Ala
                165                 170                 175

Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Ile Leu
            180                 185                 190

Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
        195                 200                 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Gln Phe Arg Glu Leu
    210                 215                 220

Gly Tyr Val Leu Lys Asp Lys Tyr Asn Glu Ala Val His Val Glu Pro
225                 230                 235                 240

Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys Ile Lys Lys
                245                 250                 255

Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val Tyr Ile Glu
            260                 265                 270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
        275                 280                 285

Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala Ser Gly Cys
    290                 295                 300

Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ala Arg
305                 310                 315                 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
                325                 330                 335

Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
            340                 345


<210> 68
<211> 349
<212> PRT
<213> Mus musculus

<400> 68
Met Thr Arg Lys Ala Arg Arg Cys Leu Gly His Leu Phe Leu Ser Leu
  1               5                  10                  15

Gly Ile Val Tyr Leu Arg Ile Gly Gly Phe Ser Ser Val Val Ala Leu
             20                  25                  30

Gly Ala Ser Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
         35                  40                  45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
     50                  55                  60

Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe Arg Asn Gly
 65                  70                  75                  80
```

```
Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
                 85                  90                  95

Leu Lys Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala Ile Ile Ala
            100                 105                 110

Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr Gln Gly Asn Leu
        115                 120                 125

Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Arg Asp
    130                 135                 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
145                 150                 155                 160

Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys Gln Asn Ala
                165                 170                 175

Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Ile Leu
            180                 185                 190

Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
        195                 200                 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Gln Phe Arg Glu Leu
    210                 215                 220

Gly Tyr Val Leu Lys Asp Lys Tyr Asn Glu Ala Val His Val Glu Pro
225                 230                 235                 240

Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys Ile Lys Lys
                245                 250                 255

Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val Tyr Ile Glu
            260                 265                 270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
        275                 280                 285

Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala Ser Gly Cys
    290                 295                 300

Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ala Arg
305                 310                 315                 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
                325                 330                 335

Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
            340                 345


<210> 69
<211> 349
<212> PRT
<213> Mus musculus

<400> 69
Met Thr Arg Lys Ala Arg Arg Cys Leu Gly His Leu Phe Leu Ser Leu
  1               5                  10                  15

Gly Ile Val Tyr Leu Arg Ile Gly Gly Phe Ser Ser Val Val Ala Leu
             20                  25                  30
```

```
Gly Ala Ser Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
         35                  40                  45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
     50                  55                  60

Gly Ser Gln Met Gly Leu Asp Glu Cys Gln Phe Gln Phe Arg Asn Gly
 65                  70                  75                  80

Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
                 85                  90                  95

Leu Lys Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala Ile Ile Ala
            100                 105                 110

Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr Gln Gly Asn Leu
        115                 120                 125

Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Trp Asp
    130                 135                 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
145                 150                 155                 160

Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys Gln Asn Ala
                165                 170                 175

Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Ile Leu
            180                 185                 190

Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
        195                 200                 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Gln Phe Arg Glu Leu
    210                 215                 220

Gly Tyr Val Leu Lys Asp Lys Tyr Asn Glu Ala Val His Val Glu Pro
225                 230                 235                 240

Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys Ile Lys Lys
                245                 250                 255

Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val Tyr Ile Glu
            260                 265                 270

Leu Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
        275                 280                 285

Thr Gln Gly Arg Ala Cys Asn Lys Thr Ala Pro Gln Ala Ser Gly Cys
    290                 295                 300

Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ala Arg
305                 310                 315                 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
                325                 330                 335

Asn Thr Cys Ser Glu Arg Thr Glu Met Tyr Thr Cys Lys
            340                 345
```

<210> 70

<211> 349
<212> PRT
<213> Gallus gallus

<400> 70

```
Met Asn Arg Lys Thr Arg Arg Trp Ile Phe His Ile Phe Leu Ser Leu
  1               5                  10                  15

Gly Ile Val Tyr Ile Lys Ile Gly Gly Phe Ser Ser Val Val Ala Leu
            20                  25                  30

Gly Ala Ser Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
        35                  40                  45

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
    50                  55                  60

Gly Ser Gln Met Gly Ile Asn Glu Cys Gln Phe Gln Phe Arg Asn Gly
65                  70                  75                  80

Arg Trp Asn Cys Ser Ala Leu Gly Glu Arg Thr Val Phe Gly Lys Glu
                85                  90                  95

Leu Lys Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala Ile Ile Ala
            100                 105                 110

Ala Gly Val Ala His Ala Ile Thr Ala Ala Cys Thr Gln Gly Asn Leu
        115                 120                 125

Ser Asp Cys Gly Cys Asp Lys Glu Lys Gln Gly Gln Tyr His Lys Glu
    130                 135                 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Ile Arg Tyr Gly Ile
145                 150                 155                 160

Gly Phe Ala Lys Val Phe Val Asp Ala Arg Glu Ile Lys Gln Asn Ala
                165                 170                 175

Arg Thr Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Ile Leu
            180                 185                 190

Glu Glu Asn Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
        195                 200                 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Lys Phe Arg Glu Leu
    210                 215                 220

Gly Tyr Ile Leu Lys Asp Lys Tyr Asn Glu Ala Val Gln Val Glu Pro
225                 230                 235                 240

Val Arg Ala Ser Arg Asn Lys Arg Pro Thr Phe Leu Lys Ile Lys Lys
                245                 250                 255

Pro Leu Ser Tyr Arg Lys Pro Met Asp Thr Asp Leu Val Tyr Ile Glu
            260                 265                 270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Pro Val Thr Gly Ser Val Gly
        275                 280                 285

Thr Gln Gly Arg Met Cys Asn Lys Thr Ala Gln Gln Ser Asn Gly Cys
    290                 295                 300

Asp Leu Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Ser Arg
```

305 310 315 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Tyr Val Lys Cys
325 330 335

Asn Thr Cys Ser Glu Arg Thr Glu Val Tyr Thr Cys Lys
340 345

<210> 71
<211> 352
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: WNT domain sequence

<400> 71
Leu Cys Arg Ser Leu Pro Gly Leu Ser Pro Arg Gln Arg Gln Leu Cys
1 5 10 15

Arg Arg Asn Pro Asp Val Met Ala Ser Val Ser Glu Gly Ala Gln Leu
20 25 30

Ala Ile Gln Glu Cys Gln His Gln Phe Arg Gly Arg Arg Trp Asn Cys
35 40 45

Ser Thr Leu Asp Ser Leu Asn Glu Arg Ser Val Phe Gly Lys Val Leu
50 55 60

Lys Lys Gly Thr Arg Glu Thr Ala Phe Val Tyr Ala Ile Ser Ser Ala
65 70 75 80

Gly Val Ala His Ala Val Thr Arg Ala Cys Ser Glu Gly Glu Leu Glu
85 90 95

Ser Cys Gly Cys Asp Asp Lys Arg Lys Ala Asp Glu Glu Arg Leu Arg
100 105 110

Ile Lys Leu Glu Pro Lys Gly Pro Gly Gly Pro Gln Gly Ser Trp Lys
115 120 125

Trp Gly Gly Cys Ser Asp Asn Val Glu Phe Gly Ile Arg Phe Ser Arg
130 135 140

Glu Phe Val Asp Ala Arg Glu Arg Glu Lys Leu Met Thr Lys Ser Arg
145 150 155 160

Asp Arg Asp Ala Arg Ser Leu Met Asn Leu His Asn Asn Glu Ala Gly
165 170 175

Arg Lys Ala Val Lys Ser His Met Arg Arg Glu Cys Lys Cys His Gly
180 185 190

Val Ser Gly Ser Cys Ser Leu Lys Thr Cys Trp Leu Ser Leu Pro Asp
195 200 205

Phe Arg Glu Val Gly Asp Leu Leu Lys Glu Lys Tyr Asp Gly Ala Ile
210 215 220

Glu Val Glu Val Asn Lys Arg Gly Lys Gly Gln Arg Ser Leu Ser Ser
225 230 235 240

```
Arg Lys Gln Ala Ser Ala Leu Glu Ala Ala Asn Glu Arg Phe Lys Lys
                245                 250                 255

Pro Thr Arg Asn Gln Tyr Thr Asp Leu Val Tyr Leu Glu Lys Ser Pro
            260                 265                 270

Asp Tyr Cys Glu Arg Asp Arg Glu Thr Gly Ser Leu Gly Thr Gln Gly
        275                 280                 285

Arg Val Cys Asn Lys Thr Ser Lys Gly Leu Gln Trp Arg Asp Gly Cys
    290                 295                 300

Glu Leu Leu Cys Cys Gly Arg Gly Tyr Asn Thr Glu Gln Lys Val Glu
305                 310                 315                 320

Arg Thr Glu Lys Cys Asn Cys Lys Phe His Asn Gly Trp Cys Cys Tyr
                325                 330                 335

Val Lys Cys Glu Glu Cys Thr Glu Val Val Glu Val His Thr Cys Lys
            340                 345                 350
```

<210> 72
<211> 1216
<212> PRT
<213> Rattus norvegicus

<400> 72

```
Met Cys Leu Pro Ser Cys Leu Leu Ser Ile Trp Val Leu Phe Met Ala
  1               5                  10                  15

Ala Gln Ser Leu Gly Lys Thr Trp Val Pro Asp His Cys Arg Ser Pro
             20                  25                  30

Thr Glu Ala Thr Cys Asn Phe Val Cys Asp Cys Gly Asp Cys Ser Asp
         35                  40                  45

Glu Ala Gln Cys Gly Phe His Gly Ala Ser Thr Thr Pro Asn Thr Pro
     50                  55                  60

Phe Thr Cys Asn Phe Glu Gln Asp Pro Cys Gly Trp Gln Asp Ile Ser
 65                  70                  75                  80

Thr Ser Gly Tyr Arg Trp Leu Arg Asp Arg Ala Gly Ala Gly Leu Asp
                 85                  90                  95

Ser Ser Gly Pro His Ser Asp His Thr Arg Gly Thr Asp Leu Gly Trp
            100                 105                 110

Tyr Met Ala Val Gly Thr His Ser Gly Lys Glu Pro Ser Thr Arg Thr
        115                 120                 125

Leu Arg Ser Pro Val Met Arg Glu Ala Ala Pro Thr Cys Glu Leu Arg
    130                 135                 140

Leu Trp Tyr His Thr Asp Ser Arg Asp Val Ala Glu Leu Arg Leu Asp
145                 150                 155                 160

Leu Thr His Gly Met Glu Thr Leu Thr Leu Trp Gln Ser Ser Gly Pro
```

```
                165                 170                 175

Trp Gly Pro Trp Pro Gly Arg Glu Leu Ala Val Asn Thr Gly Arg Ile
            180                 185                 190

Gln Gly Asp Phe Lys Val Thr Phe Ser Ala Thr Arg Asn Ala Thr His
        195                 200                 205

Arg Gly Ala Val Ala Leu Asp Asp Met Glu Phe Trp Asp Cys Gly Leu
    210                 215                 220

Pro Ile Pro Gln Ala Arg Cys Pro Leu Gly His His His Cys Gln Asn
225                 230                 235                 240

Lys Ala Cys Val Glu Pro His Gln Leu Cys Asp Gly Glu Asp Asn Cys
                245                 250                 255

Gly Asp Ser Ser Asp Glu Asp Pro Leu Ile Cys Ser His His Met Ala
            260                 265                 270

Thr Asp Phe Glu Thr Gly Leu Gly Pro Trp Thr Gln Leu Glu Gly Trp
        275                 280                 285

Thr Arg Asn Phe Ser Ala Gly Ser Met Val Ser Pro Ala Trp Pro His
    290                 295                 300

Arg Asp His Ser Arg Asn Ser Ala Tyr Gly Phe Phe Leu Val Ser Val
305                 310                 315                 320

Ala Lys Pro Gly Thr Thr Ala Val Leu Tyr Ser Pro Glu Phe Gln Gly
                325                 330                 335

Ser Val Ser Tyr Asn Cys Ser Phe Thr Phe Tyr Tyr Tyr Leu His Gly
            340                 345                 350

Ser Glu Ala Asn Gln Phe Gln Leu Phe Val Gln Ala Gln Gly Leu Asn
        355                 360                 365

Thr Thr Gln Pro Pro Val Leu Leu Arg Ser Arg His Gly Glu Leu Gly
    370                 375                 380

Thr Ala Trp Val Arg Asp Arg Val Asn Ile Gln Ser Ala His Pro Phe
385                 390                 395                 400

Arg Ile Leu Leu Ala Gly Glu Thr Gly Pro Gly Gly Phe Val Gly Leu
                405                 410                 415

Asp Asp Leu Ile Met Ser Asn His Cys Ile Leu Val Pro Gly Met Ser
            420                 425                 430

Thr Leu Gln Ser Ser Leu Ser Gly Pro Val Pro Leu Ala Leu Tyr Pro
        435                 440                 445

Gln Thr Ser Ile Lys Arg Thr Cys Asp Ala Gly His Leu Ser Cys Asp
    450                 455                 460

Glu Leu Cys Val Pro Pro Glu Gln Leu Cys Asp Phe Gln Gln His Cys
465                 470                 475                 480

Ala Glu Gly Glu Asp Glu Glu Lys Cys Gly Thr Thr Asp Phe Glu Ser
                485                 490                 495

Ala Ser Ala Gly Gly Trp Glu Asp Ile Ser Ile Gly Lys Leu Gln Trp
```

```
            500                 505                 510

Gln Arg Ala Glu Ala Gln Glu Ser Gly Lys Pro Ala Arg Asp Thr Asn
        515                 520                 525

Arg Asn Ala Pro Gly His Phe Leu Ser Leu Arg Lys Ala Trp Gly Gln
    530                 535                 540

Leu Arg Ser Glu Ala Arg Ala Leu Thr Pro Thr Leu Gly Pro Ser Gly
545                 550                 555                 560

Pro His Cys Glu Leu His Met Thr Tyr Tyr Phe His Ser His Pro Gln
                565                 570                 575

Gly Phe Leu Ala Leu Ala Val Val Glu Asn Gly Phe Arg Glu Leu Leu
            580                 585                 590

Trp Gln Ala Pro Ser Ser Ser Ser Gly Gly Trp Thr Leu Gln Lys Ile
        595                 600                 605

Leu Leu Gly Ala Arg Arg Trp Pro Phe Gln Leu Glu Phe Val Ser Leu
    610                 615                 620

Val Asp Leu Asp Gly Pro Gly Gln Gln Gly Ala Gly Val Asp Asn Val
625                 630                 635                 640

Thr Leu Arg Asp Cys Asn Pro Met Val Thr Thr Glu Ser Asp Gln Glu
                645                 650                 655

Val Ser Cys Asn Phe Glu Arg Asp Ser Cys Ser Trp His Thr Gly His
            660                 665                 670

Leu Thr Asp Ala His Trp His Arg Val Lys Ser His Gly Ser Gln Tyr
        675                 680                 685

Asp His Thr Thr Gly Gln Gly Phe Phe Met Phe Leu Asp Pro Met Asp
    690                 695                 700

Pro Pro Ala Arg Gly Gln Gly Ala Leu Leu Leu Thr Arg Pro Gln Val
705                 710                 715                 720

Pro Val Val Pro Lys Glu Cys Leu Ser Phe Trp Tyr His Leu His Gly
                725                 730                 735

Pro Gln Ile Gly Thr Leu Cys Leu Ala Met Arg Arg Glu Gly Glu Glu
            740                 745                 750

Asp Thr Leu Leu Trp Ser Arg Ser Gly Thr His Gly Asn Arg Trp His
        755                 760                 765

Gln Ala Trp Val Thr Leu His His Gln Leu Gln Pro Ser Thr Lys Tyr
    770                 775                 780

Gln Leu Leu Phe Glu Gly Leu Arg Asp Gly Tyr His Gly Thr Met Gly
785                 790                 795                 800

Leu Asp Asp Met Ala Val Arg Pro Gly Pro Cys Trp Ala Ala Lys Arg
                805                 810                 815

Cys Ser Phe Glu Asp Ser Asp Cys Gly Phe Ser Pro Gly Asp Trp Gly
            820                 825                 830

Leu Trp Thr Arg Gln Asn Asn Ala Ser Gly Leu Gly Pro Trp Gly Pro
```

```
        835                 840                 845

Trp Ile Asp His Thr Thr Gly Thr Ala Gln Gly His Tyr Met Val Val
    850                 855                 860

Asp Thr Ser Pro Asn Leu Leu Pro Lys Gly His Val Ala Ser Leu Thr
865                 870                 875                 880

Ser Glu Glu His Pro Pro Leu Ser Arg Pro Ala Cys Leu Ser Phe Trp
                885                 890                 895

Tyr His Leu Ser Phe His Asn Pro Gly Thr Leu Arg Val Phe Val Glu
            900                 905                 910

Glu Ser Thr Arg Arg Gln Glu Leu Ser Ile Ser Gly His Gly Gly Phe
        915                 920                 925

Ala Trp Arg Leu Gly Ser Val Asn Val Gln Ala Glu Gln Ala Trp Lys
    930                 935                 940

Val Val Phe Glu Ala Met Ala Ser Gly Val Glu His Ser Tyr Met Ala
945                 950                 955                 960

Leu Asp Asp Ile Ser Leu Gln Asp Gly Pro Cys Ala Gln Pro Gly Ser
                965                 970                 975

Cys Asp Phe Glu Ser Gly Leu Cys Gly Trp Ser His Leu Pro Trp Pro
            980                 985                 990

Gly Leu Gly Gly Tyr Ser Trp Asp Trp Ser Ser Gly Ala Thr Pro Ser
        995                1000                1005

Arg Tyr Pro Arg Pro Ser Val Asp His Thr Val Gly Thr Glu Ala Gly
   1010                1015                1020

His Phe Ala Phe Phe Glu Thr Ser Val Leu Gly Pro Gly Gly Gln Ala
1025                1030                1035                1040

Ala Trp Leu Gly Ser Glu Pro Leu Pro Ala Thr Ala Val Ser Cys Leu
                1045                1050                1055

His Phe Trp Tyr Tyr Met Gly Phe Pro Ala His Phe Tyr Lys Gly Glu
            1060                1065                1070

Leu Arg Val Leu Leu Ser Ser Thr Gln Gly Gln Leu Ala Val Trp His
        1075                1080                1085

Arg Gly Gly His Leu Arg Asp Gln Trp Leu Gln Val Gln Ile Glu Val
   1090                1095                1100

Ser Ser Ser Glu Glu Phe Gln Ile Val Phe Glu Ala Thr Leu Gly Gly
1105                1110                1115                1120

Gln Pro Ala Leu Gly Pro Ile Ala Leu Asp Asp Val Glu Tyr Leu Ala
                1125                1130                1135

Gly Gln His Cys Lys Gln Pro Thr Pro Ser Gln Gly Arg Val Ala Ala
            1140                1145                1150

Pro Val Ser Val Pro Val Ala Val Gly Gly Ala Leu Leu Leu Phe Leu
        1155                1160                1165

Leu Leu Leu Gly Leu Gly Gly Trp His Trp Leu Gln Lys Gln His Leu
```

```
   1170                1175                1180

Pro Cys Gln Ser Thr Asp Ala Ala Ala Ser Gly Phe Asp Asn Ile Leu
1185                1190                1195                1200

Phe Asn Ala Asp Gln Val Thr Leu Pro Glu Ser Ile Thr Ser Asn Pro
                1205                1210                1215
```

<210> 73
<211> 688
<212> PRT
<213> Xenopus laevis

<400> 73

```
Met Met Leu Ser His Trp Val Leu Leu Leu Ser Leu Gly Ala Val Trp
  1               5                  10                  15

Leu Ala Glu Gly Gly Glu Ile Ser Pro Gly Ser Cys Thr Phe Glu Asn
             20                  25                  30

Ser Thr Cys Ala Tyr Thr Ser Ala Phe Pro Phe Leu Gln Trp Thr Val
         35                  40                  45

Asn Ile Glu Gly His Tyr Val Ser Val Asp Ser Ser Asn Gly Leu Arg
     50                  55                  60

Gly Gln Lys Ala Val Leu Ile Ser Pro Asp Leu His Leu Ala Glu Trp
 65                  70                  75                  80

Ser Cys Leu Arg Leu Val Tyr Gln Ile Ala Gly Ser Glu Ser Ser Pro
                 85                  90                  95

Ser Pro Ser Ser Leu Asn Val Phe Val Arg Pro Glu Gly Glu Ser Phe
            100                 105                 110

Asp Tyr Leu Leu Trp Ser Ala Glu Glu His Ser Asp Ser Trp Leu Ile
        115                 120                 125

Ser Ser Ile Asp Leu Lys Asn Thr Thr Lys Arg Phe Lys Ile Ile Leu
    130                 135                 140

Glu Gly Val Leu Gly Glu Asn Thr Met Ser Ser Ile Ala Ile Phe Glu
145                 150                 155                 160

Val Lys Met Thr Thr Gly Tyr Cys Ile Glu Cys Asp Phe Glu Glu Asn
                165                 170                 175

His Leu Cys Gly Tyr Met Asn Ser Trp Asn Pro Asn Val Asn Trp Phe
            180                 185                 190

Val Gly Gly Gly Asn Val Lys Asn Ser His Ser Ile Leu Pro Arg Asp
        195                 200                 205

His Thr Leu Asn Asn Glu Leu Gly His Tyr Met Tyr Val Asp Ser Val
    210                 215                 220

Tyr Val Lys His Phe Gln Glu Val Ala Gln Leu Val Ser Pro Leu Ile
225                 230                 235                 240
```

```
Ile Thr Pro Ile Ser Gly Cys Leu Ser Phe Tyr Tyr Gln Leu Gln Arg
                245                 250                 255

Glu Thr Ser Asn Ile Phe Leu Val His Thr Arg Asp Leu His Gly Ser
            260                 265                 270

Tyr Asp Glu Ile Trp Lys Met Gly Ala Val Arg Gln Gly Glu Trp Asn
        275                 280                 285

Leu Ala Glu Val Asp Leu Asn Ala His Val Pro Leu Glu Val Ile Phe
    290                 295                 300

Glu Val Ala Phe Asn Gly Ile Gln Ala Gly Tyr Val Ala Leu Asp Asp
305                 310                 315                 320

Ile Leu Phe Ser Pro Val Ser Cys Ser Gly Gln Glu Gly Met Phe Phe
                325                 330                 335

Asp Ala Arg Glu Ala Gly Cys Asp Phe Glu Glu Gly Met Cys Gln Phe
            340                 345                 350

His Gln Asp Asp Asn Asn Gly Ser Gly Trp Ser Arg Val Lys Val Lys
        355                 360                 365

Pro Asn Ala Tyr Gln Met Gly Asp His Thr Thr Gly Leu Gly Tyr Phe
    370                 375                 380

Met Ile Ala Asn Thr Arg Phe Thr Gly Gln Pro Ala Tyr Phe Gly Arg
385                 390                 395                 400

Leu Tyr Gly Pro Ser Leu Pro Gly Asn Ile Gln Tyr Cys Ile Arg Phe
                405                 410                 415

Phe Tyr Ser Leu Tyr Gly Phe Tyr Lys Thr Ile Asp Ser Leu Ala Val
            420                 425                 430

Tyr Ile Phe Glu Glu Asn His Val Val Gln Glu Lys Ile Trp Ser Ala
        435                 440                 445

His Glu Thr Pro Lys Gly Val Trp Leu Gln Ala Glu Ile Ser Ile His
    450                 455                 460

Lys Pro Met Pro Phe Lys Val Val Phe Val Ser Trp Cys Lys Ser Leu
465                 470                 475                 480

Trp Asp Cys Gly Ile Ala Ala Leu Asp Asp Ile Ser Val Ser Ile Gly
                485                 490                 495

Ser Cys Lys Ile Ser Asp Arg Ile Pro Pro Leu Pro Gly Lys Cys Thr
            500                 505                 510

Phe Glu Lys Asn Asp Cys Gly Phe Gly Ala Gly Met Ala Lys Glu Gly
        515                 520                 525

Tyr Leu Ala Gln Asn Thr Arg Glu Asp Pro Thr Phe Tyr Thr Gly Pro
    530                 535                 540

Asn Gly Asp His Thr Ser Gly Val Gly Tyr Tyr Met Tyr Ile Glu Ala
545                 550                 555                 560

Thr Asn Met Val Phe Gly Gln Lys Ala Lys Leu Ile Ser Arg Pro Leu
                565                 570                 575
```

```
Arg Ala Val Ala Gly Lys Gln Cys Leu Thr Phe Tyr Tyr His Met Tyr
            580                 585                 590

Gly Ala Gly Thr Gly Leu Leu Asn Val Tyr Leu Thr Lys Glu Gly Asp
        595                 600                 605

Ile Asn Lys Asp Thr Leu Leu Trp Thr Arg Lys Gly Glu Gln Ser Ile
    610                 615                 620

Thr Trp Leu Lys Ala Gln Met Glu Tyr Glu Ser Glu Gln Gln His Lys
625                 630                 635                 640

Ile Val Phe Glu Ala Val Arg Gly Ile Ser Ile Arg Ser Asp Ile Ala
                645                 650                 655

Ile Asp Asp Ile Leu Phe Gln Asn Gly Pro Cys Asn Asp Ser Ser Asp
            660                 665                 670

Pro Leu Gln Ser Ser Gly Tyr Ser Asp Asn Phe Asn Asn Ile Glu Phe
        675                 680                 685
```

<210> 74
<211> 5376
<212> PRT
<213> Mus musculus

<400> 74

```
Met Ala Leu Pro Val Trp Thr Leu Met Leu Leu Val Gly Ala Ala Trp
  1               5                  10                  15

Gly Gln Glu Gln Val Pro Ala Trp Arg Pro Asn Ser Pro Asp Leu Gly
             20                  25                  30

Pro Met Val His Thr Ser Arg Glu Asp Ser Ile Leu Ser Lys Cys Asp
         35                  40                  45

Phe Glu Asp Asn Ser Arg Pro Phe Cys Asp Trp Ser Gln Met Ser Ala
     50                  55                  60

Asp Asp Gly Asp Trp Ile Arg Thr Thr Gly Pro Ser Leu Thr Gly Thr
 65                  70                  75                  80

Ser Gly Pro Pro Gly Gly Tyr Pro Asn Gly Glu Gly Tyr Tyr Leu His
                 85                  90                  95

Met Asp Pro Lys Thr Phe Pro Gln Gly Gly Val Ala Arg Leu Arg Ser
            100                 105                 110

Pro Asp Ile Trp Glu Gln Gly Pro Leu Cys Val His Phe Ala Phe His
        115                 120                 125

Met Phe Gly Leu Ser Trp Gly Ala Gln Leu Arg Leu Leu Leu Leu Arg
    130                 135                 140

Gly Arg Lys His Leu Arg Pro Tyr Val Leu Trp Lys His Val Asn Thr
145                 150                 155                 160

Gln Ser Pro Ser Trp Met Pro Thr Thr Val Thr Val Pro Ala Asp His
                165                 170                 175
```

```
Asp Ile Pro Ser Trp Leu Met Phe Glu Gly Met Arg Gly Asn Thr Ala
            180                 185                 190

Tyr Leu Asp Ile Ser Leu Asp Gly Leu Ser Ile Gln Arg Gly Thr Cys
        195                 200                 205

Asn Gln Val Cys Met Ser Gln Met Cys Thr Phe Asp Thr Leu Asn Asp
    210                 215                 220

Leu Cys Gly Trp Ser Trp Val Pro Thr Ala Thr Gly Ala Lys Trp Thr
225                 230                 235                 240

Gln Lys Lys Gly Pro Thr Gly Lys Gln Gly Val Gly Pro Ala Glu Asp
                245                 250                 255

Phe Ser Asn Pro Gly Asn Gly Tyr Tyr Met Leu Leu Asp Ser Thr Asn
            260                 265                 270

Ala Arg Pro Gly Gln Lys Ala Val Leu Leu Ser Pro Leu Ser His Ser
        275                 280                 285

Arg Gly Cys Met Thr Leu Ser Phe His Tyr Ile Met His Gly Gln Gly
    290                 295                 300

His Glu Glu Gly Leu Phe Val Tyr Ala Thr Phe Leu Gly Asn Ile Arg
305                 310                 315                 320

Lys Tyr Thr Leu Phe Ser Gly His Pro Gly Pro Asp Trp Gln Ala Val
                325                 330                 335

Ser Val Asn Tyr Thr Gly Gln Gly Gln Ile Gln Phe Met Val Val Gly
            340                 345                 350

Met Phe Gly Asn Ile Pro Glu Pro Ala Ile Ala Val Asp Ala Ile Ser
        355                 360                 365

Ile Ala Pro Cys Gly Glu Ser Phe Pro Gln Cys Asp Phe Glu Asp Arg
    370                 375                 380

Val His Pro Phe Cys Asp Trp Asn Gln Val Tyr Gly Asp Met Gly His
385                 390                 395                 400

Trp Ser Trp Gly Ser Lys Ser Val Pro Thr Leu Ile Ala Gly Ser Pro
                405                 410                 415

Arg Glu Phe Pro Tyr Gly Gly Glu His Tyr Ile Phe Phe Asp Ser Val
            420                 425                 430

Lys Leu Ser Gln Glu Gly Gln Ser Ala Arg Leu Val Ser Pro Pro Phe
        435                 440                 445

Cys Ala Pro Gly Gly Ile Cys Val Glu Phe Ala Tyr His Met Tyr Gly
    450                 455                 460

Leu Gly Lys Gly Thr Thr Leu Lys Leu Leu Leu Gly Ser Pro Ala Gly
465                 470                 475                 480

Ser Ser Pro Ile Pro Leu Trp Asn Arg Val Gly Ser Gln Ser Ser Gly
                485                 490                 495

Trp Met Asn Ser Ser Val Thr Ile Pro Lys Gly Tyr Gln Gln Pro Met
            500                 505                 510
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Gln Leu Phe Ile Glu Ala Thr Arg Gly Thr Ser Thr Ala Phe Val Val
        515                 520                 525

Ala Leu Asn Phe Ile Leu Ile Ser His Gly Pro Cys Arg Val Leu Leu
    530                 535                 540

Gln Thr Glu Ile Pro Ser Ser Pro Leu Leu Pro Pro Thr Gly Pro Ser
545                 550                 555                 560

Glu Ser Thr Val Pro Thr Leu Pro Met Glu Gln Pro Thr Ser Pro Thr
                565                 570                 575

Lys Ala Thr Thr Val Thr Ile Glu Ile Pro Thr Thr Pro Thr Glu Glu
            580                 585                 590

Ala Thr Ile Pro Thr Glu Thr Thr Thr Val Pro Thr Glu Val Ile Asn
        595                 600                 605

Val Ser Pro Lys Glu Thr Ser Ile Pro Pro Glu Val Thr Ile Pro Thr
    610                 615                 620

Glu Val Ile Thr Val Ser Pro Glu Glu Ile Ile Ser Pro Thr Glu Val
625                 630                 635                 640

Thr Pro Val Pro Thr Asp Val Thr Ala Ala Tyr Val Glu Ala Thr Asn
                645                 650                 655

Ala Ser Pro Glu Glu Thr Ser Val Pro Pro Glu Val Thr Ile Leu Thr
            660                 665                 670

Glu Val Thr Thr Val Ser Pro Glu Glu Thr Thr Val Pro Thr Glu Val
        675                 680                 685

Pro Ile Val Leu Ile Glu Ala Thr Ala Phe Pro Thr Gly Glu Thr Thr
    690                 695                 700

Leu Tyr Thr Glu Val Pro Thr Val Pro Thr Glu Val Thr Gly Val His
705                 710                 715                 720

Thr Glu Val Thr Asn Val Ser Pro Glu Glu Thr Ser Val Pro Thr Glu
                725                 730                 735

Glu Thr Ile Ser Thr Glu Val Thr Thr Val Ser Pro Glu Glu Thr Thr
            740                 745                 750

Val Pro Thr Glu Val Pro Ile Val Leu Ile Glu Ala Thr Ala Ser Pro
        755                 760                 765

Thr Gly Glu Ile Thr Leu Tyr Thr Glu Val Pro Thr Val Pro Thr Glu
    770                 775                 780

Val Thr Gly Val His Thr Glu Val Thr Asn Val Ser Pro Glu Glu Thr
785                 790                 795                 800

Ser Val Pro Thr Glu Glu Thr Ile Ser Thr Glu Val Thr Thr Val Ser
                805                 810                 815

Pro Glu Glu Thr Thr Leu Pro Thr Glu Val Pro Thr Val Ser Thr Glu
            820                 825                 830

Val Thr Asn Val Ser Pro Glu Glu Thr Ser Val Pro Pro Glu Glu Thr
        835                 840                 845
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Ile Leu Thr Thr Leu Tyr Thr Glu Val Pro Thr Val Pro Thr Glu Val
    850                 855                 860

Thr Gly Val His Thr Glu Val Thr Asn Val Ser Pro Glu Glu Thr Ser
865                 870                 875                 880

Val Pro Thr Glu Glu Thr Ile Ser Thr Glu Val Thr Thr Val Ser Pro
                885                 890                 895

Glu Glu Thr Thr Leu Pro Thr Glu Val Pro Thr Val Ser Thr Glu Val
            900                 905                 910

Thr Asn Val Ser Pro Glu Glu Thr Ser Val Pro Pro Glu Glu Thr Ile
        915                 920                 925

Leu Thr Glu Ile Thr Thr Val Ser Pro Glu Glu Thr Val Phe Pro Ile
    930                 935                 940

Glu Gly Thr Thr Leu Pro Thr Glu Val Leu Thr Val Pro Ile Glu Val
945                 950                 955                 960

Thr Thr Phe Pro Thr Gly Glu Thr Thr Val Pro Thr Glu Val Pro Thr
                965                 970                 975

Val Ser Thr Glu Met Thr Gly Val His Thr Glu Val Thr Thr Val Phe
            980                 985                 990

Pro Glu Glu Thr Ser Ile Pro Thr Glu Val Ala Thr Val Leu Pro Ala
        995                1000                1005

Ser Ile Pro Pro Glu Glu Thr Thr Thr Pro Thr Glu Val Thr Thr Thr
   1010                1015                1020

Pro Pro Glu Glu Thr Thr Ile Pro Ala Glu Val Thr Thr Val Pro Pro
1025                1030                1035                1040

Ala Ser Ile Pro Pro Glu Glu Thr Ala Ser Leu Thr Glu Val Thr Thr
                1045                1050                1055

Thr Pro Pro Glu Glu Thr Thr Thr Pro Thr Glu Val Thr Thr Val Pro
            1060                1065                1070

Pro Glu Lys Thr Thr Ile Pro Thr Glu Val Thr Thr Val Pro Pro Ala
        1075                1080                1085

Ser Ile Phe Pro Glu Glu Thr Thr Val Pro Pro Glu Glu Thr Thr Ile
   1090                1095                1100

Ala Ser Glu Glu Thr Thr Val Ser Thr Gln Glu Thr Thr Leu Leu Thr
1105                1110                1115                1120

Glu Gln Ser Ala Val Thr Gln Thr Ser Ile Ala Cys Arg Pro Pro Cys
                1125                1130                1135

Pro Ser Pro Pro Leu Met Pro Ile Gly Pro Leu Leu Ser Lys Pro Pro
            1140                1145                1150

Gly Val Ser Met Phe Ser Leu Ala Pro Thr Thr Gly Val Ser Thr Thr
        1155                1160                1165

Glu Ser Cys Pro Pro Asn Ala His Ile Glu Leu Cys Ala Cys Pro Ala
   1170                1175                1180
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Ser Cys Glu Ser Pro Lys Pro Ser Cys Gln Pro Pro Cys Ile Pro Gly
1185                1190                1195                1200

Cys Val Cys Asn Pro Gly Phe Leu Phe Ser Asn Asn Gln Cys Ile Asn
                1205                1210                1215

Glu Ser Ser Cys Asn Cys Pro Tyr Asn Asn Lys His Tyr Lys Pro Gly
            1220                1225                1230

Glu Glu Trp Phe Thr Pro Asn Cys Thr Glu Arg Cys Arg Cys Leu Pro
        1235                1240                1245

Gly Ser Leu Met Glu Cys Gln Ile Ser Gln Cys Gly Thr His Thr Val
    1250                1255                1260

Cys Gln Leu Lys Ser Asp Gln Tyr Gln Cys Glu Pro Tyr Gly Lys Ala
1265                1270                1275                1280

Thr Cys Leu Val Tyr Gly Asp Leu His Phe Val Thr Phe Asp Glu Arg
                1285                1290                1295

His Ile Gly Phe Thr Gly Thr Cys Thr Tyr Ile Leu Thr Gln Thr Cys
            1300                1305                1310

Ser Asn Ser Thr Asp His Phe Phe Arg Ile Thr Ala Asn Thr Glu Glu
        1315                1320                1325

Arg Gly Val Glu Gly Val Ser Cys Leu Asp Lys Val Val Ile Ser Leu
    1330                1335                1340

Pro Glu Thr Thr Val Thr Met Ile Ser Gly Arg His Thr Leu Ile Gly
1345                1350                1355                1360

Asp Gln Glu Val Thr Leu Pro Ala Ile Leu Ser Asp Asp Thr Tyr Val
                1365                1370                1375

Gly Leu Ser Gly Arg Phe Val Glu Leu Arg Thr Thr Phe Gly Leu Arg
            1380                1385                1390

Val Arg Trp Asp Gly Asp Gln Gln Leu Phe Val Thr Val Ser Ser Thr
        1395                1400                1405

Phe Ser Gly Lys Leu Cys Gly Phe Cys Gly Asn Tyr Asp Gly Asp Ser
    1410                1415                1420

Ser Asn Asp Asn Leu Lys Ser Asp Gly Met Met Thr His Asp Glu Glu
1425                1430                1435                1440

Glu Leu Arg Leu Ser Trp Gln Val Glu Glu Asp Glu Asp Lys Asp Trp
                1445                1450                1455

Val Ser Ser Arg Cys Gln Lys Lys Lys Asn Pro Pro Ser Cys Asp Ala
            1460                1465                1470

Ala Leu Gly Ser Thr Met Ser Gly Pro Lys Leu Cys Gly Gln Leu Val
        1475                1480                1485

Asn Pro Ser Gly Pro Phe Glu Ala Cys Leu Leu His Leu Lys Ala Ser
    1490                1495                1500

Ser Phe Leu Asp Asn Cys Val Thr Asp Met Cys Ser Phe Gln Gly Leu
1505                1510                1515                1520
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Gln Gln Lys Leu Cys Ala Arg Met Ser Ala Met Thr Ala Thr Cys Gln
                1525                1530                1535

Asp Ala Gly Tyr Pro Val Lys Pro Trp Arg Glu Pro Gln Phe Cys Pro
            1540                1545                1550

Leu Val Cys Pro Lys Asn Ser Arg Tyr Ser Leu Cys Ala Lys Pro Cys
        1555                1560                1565

Pro Glu Thr Cys His Pro Ile Ser Thr Thr Gln His Cys Ser Asp Lys
    1570                1575                1580

Cys Val Glu Gly Cys Glu Cys Asp Pro Gly Phe Ile Leu Ser Gly Ser
1585                1590                1595                1600

Glu Cys Val Pro Ser Ser Gln Cys Gly Cys Thr Ser Phe Gln Gly Arg
                1605                1610                1615

Tyr Phe Lys Leu Gln Glu Gln Trp Phe Asn Pro Asp Cys Lys Glu Ile
            1620                1625                1630

Cys Thr Cys Glu Ser His Asn His Ile Leu Cys Lys Pro Trp Lys Cys
        1635                1640                1645

Lys Ala Gln Glu Ala Cys Ser Tyr Lys Asn Gly Val Leu Gly Cys His
    1650                1655                1660

Ala Gln Gly Ala Ala Thr Cys Met Val Ser Gly Asp Pro His Tyr Leu
1665                1670                1675                1680

Thr Phe Asp Gly Ala Leu His His Phe Met Gly Thr Cys Thr Tyr Val
                1685                1690                1695

Leu Thr Gln Pro Cys Trp Ser Lys Ser Gln Glu Asn Asn Phe Val Val
            1700                1705                1710

Ser Ala Thr Asn Glu Ile His Asp Gly Asn Leu Glu Val Ser Tyr Val
        1715                1720                1725

Lys Ala Val His Val Gln Val Phe Asp Leu Lys Ile Ser Met Phe Lys
    1730                1735                1740

Gly Gln Lys Val Val Leu Asn Asn Gln Arg Val Val Leu Pro Val Trp
1745                1750                1755                1760

Pro Ser Gln Gly Arg Val Thr Ile Arg Leu Ser Gly Ile Phe Val Leu
                1765                1770                1775

Leu Tyr Thr Asn Phe Gly Leu Gln Val Arg Tyr Asp Gly Arg His Leu
            1780                1785                1790

Val Glu Val Thr Val Pro Ser Ser Tyr Thr Gly Ser Leu Cys Gly Leu
        1795                1800                1805

Cys Gly Asn Tyr Asn Asn Asn Ser Met Asp Asp Asn Leu Arg Ala Asp
    1810                1815                1820

Met Lys Pro Ala Gly Asn Ser Leu Leu Leu Gly Ala Ala Trp Lys Ile
1825                1830                1835                1840

Leu Glu Ala Ser Asp Pro Gly Cys Phe Leu Ala Gly Gly Lys Pro Ser
                1845                1850                1855
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Arg Cys Ala Asp Ser Asp Met Asp Asp Val Trp Thr Lys Lys Cys Ala
          1860                1865                1870

Ile Leu Met Asn Pro Leu Gly Pro Phe Ser Asn Cys His Glu Ala Val
       1875                1880                1885

Pro Pro Gln Ala Ser Phe Ser Ser Cys Val Tyr Gly Gln Cys Glu Thr
   1890                1895                1900

Asn Gly Asp Asn Leu Thr Phe Cys His Ser Leu Gln Ala Tyr Ala Ser
1905               1910                1915                1920

Leu Cys Ala Gln Ala Gly Gln Val Thr Thr Trp Arg Asn Ser Thr Phe
               1925                1930                1935

Cys Pro Met Arg Cys Pro Pro Arg Ser Ser Tyr Asn Pro Cys Ala Asn
          1940                1945                1950

Ser Cys Pro Ala Thr Cys Leu Thr Leu Ser Thr Pro Arg Asp Cys Pro
       1955                1960                1965

Thr Leu Pro Cys Val Glu Gly Cys Glu Cys Gln Ser Gly His Ile Leu
   1970                1975                1980

Ser Gly Thr Thr Cys Val Pro Leu Arg Gln Cys Gly Cys Ser Asp Gln
1985               1990                1995                2000

Asp Gly Ser Tyr His Leu Leu Gly Glu Ser Trp Tyr Thr Glu Lys Thr
               2005                2010                2015

Cys Thr Thr Leu Cys Thr Cys Ser Ala His Ser Asn Ile Thr Cys Ser
          2020                2025                2030

Pro Thr Ala Cys Lys Ala Asn His Val Cys Leu Arg Gln Glu Gly Leu
       2035                2040                2045

Leu Arg Cys Ala Ala Glu Met Gly Glu Cys Arg Ile Ser Glu Asp Ser
   2050                2055                2060

Gln Ile Val Ser Phe Asp Asp His Ser His Pro Ile Gln Asp Thr Cys
2065               2070                2075                2080

Thr Tyr Ile Leu Val Lys Val Cys His Pro Asn Thr Asn Met Pro Phe
               2085                2090                2095

Phe Met Ile Ser Ala Lys Thr Asp Ile Asn Thr Asn Gly Lys Asn Lys
          2100                2105                2110

Thr Phe Gly Val Tyr Gln Leu Tyr Ile Asp Ile Phe Asn Phe His Ile
       2115                2120                2125

Thr Leu Gln Lys Asp His Leu Val Leu Ile Ser Leu Ile Asn Asp Ser
   2130                2135                2140

Ile Val Thr Leu Pro Thr Thr Thr His Ile Pro Gly Val Ser Val Met
2145               2150                2155                2160

Thr Glu Asp Val Tyr Thr Ile Val Thr Ile Lys Asp Glu Ile Gln Val
               2165                2170                2175

Lys Phe Glu Ser Asn Asn Phe Leu Asp Val Lys Ile Pro Ala Ser Ser
          2180                2185                2190
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Asn Gly Lys Val Cys Gly Val Cys Gly Asn Phe Asn Gly Glu Glu Glu
       2195                2200                2205

Asp Glu Leu Met Thr Pro Ser Gly Glu Leu Ala Glu Asp Glu Gln Glu
   2210                2215                2220

Phe Met Asn Ser Trp Lys Asp Lys Ser Met Asp Pro Asn Cys Gln Lys
2225                2230                2235                2240

Ile Glu Gly Gln Asn Leu Gln Val Glu Gln Gln Glu Ile Met Asn Gly
               2245                2250                2255

Lys Cys Arg Pro Ile Asp Phe Glu Lys Ala Gln Ala Asn Cys Gln Thr
           2260                2265                2270

Ala Leu Gln Gly Pro Ala Trp Ala His Cys Ser Ser Arg Val Pro Ile
       2275                2280                2285

Lys Pro Phe Leu Leu Lys Cys Met Asn Ser Phe Cys Glu Phe Arg Glu
   2290                2295                2300

Leu Phe Arg Ala Leu Cys Asp Ser Leu Gln Ser Phe Glu Asp Ala Cys
2305                2310                2315                2320

Gln Asn Gln Gly Leu Lys Pro Pro Ile Trp Arg Asn Ser Ser Phe Cys
               2325                2330                2335

Pro Leu Glu Cys Pro Ala His Ser His Tyr Thr Asn Cys Leu Pro Ser
           2340                2345                2350

Cys Pro Pro Ser Cys Leu Asp Pro Asp Ser Arg Cys Glu Gly Ser Gly
       2355                2360                2365

His Lys Val Pro Ala Thr Cys Arg Glu Gly Cys Ile Cys Gln Pro Asp
   2370                2375                2380

Tyr Val Leu Leu Asn Asp Lys Cys Val Leu Arg Ser His Cys Gly Cys
2385                2390                2395                2400

Lys Asp Ala Gln Gly Val Phe Ile Pro Ala Gly Lys Thr Trp Ile Ser
               2405                2410                2415

Glu Asp Cys Thr Gln Ser Cys Thr Cys Met Lys Gly Ser Met Arg Cys
           2420                2425                2430

Trp Asp Phe Gln Cys Pro Pro Gly Thr Tyr Cys Lys Asn Ser Asn Asp
       2435                2440                2445

Gly Ser Ser Asn Cys Val Lys Ile Ser Leu Gln Cys Pro Ala His Ser
   2450                2455                2460

Lys Phe Thr Asp Cys Leu Pro Pro Cys His Pro Ser Cys Ser Asp Pro
2465                2470                2475                2480

Asp Gly His Cys Glu Gly Ile Ser Thr Asn Ala His Ser Asn Cys Lys
               2485                2490                2495

Glu Gly Cys Val Cys Gln Pro Gly Tyr Val Leu Arg Asn Asp Lys Cys
           2500                2505                2510

Val Leu Arg Ile Glu Cys Gly Cys Gln His Thr Gln Gly Gly Phe Ile
       2515                2520                2525
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Pro Ala Gly Lys Asn Trp Thr Ser Arg Gly Cys Ser Gln Ser Cys Asp
   2530                2535                2540

Cys Met Glu Gly Val Ile Arg Cys Gln Asn Phe Gln Cys Pro Ser Gly
2545                2550                2555                2560

Thr Tyr Cys Gln Asp Ile Glu Asp Gly Thr Ser Asn Cys Ala Asn Ile
                2565                2570                2575

Thr Leu Gln Cys Pro Ala His Ser Ser Phe Thr Asn Cys Leu Pro Pro
            2580                2585                2590

Cys Gln Pro Ser Cys Ser Asp Pro Glu Gly His Cys Gly Gly Ser Thr
        2595                2600                2605

Thr Lys Ala Pro Ser Ala Cys Gln Glu Gly Cys Val Cys Glu Pro Asp
   2610                2615                2620

Tyr Val Val Leu Asn Asn Lys Cys Val Pro Arg Ile Glu Cys Gly Cys
2625                2630                2635                2640

Lys Asp Ala Gln Gly Val Leu Ile Pro Ala Asp Lys Ile Trp Ile Asn
                2645                2650                2655

Lys Gly Cys Thr Gln Thr Cys Ala Cys Val Thr Gly Thr Ile His Cys
            2660                2665                2670

Arg Asp Phe Gln Cys Pro Ser Gly Thr Tyr Cys Lys Asp Ile Lys Asp
        2675                2680                2685

Asp Ala Ser Asn Cys Thr Glu Ile Ile Leu Gln Cys Pro Asp His Ser
   2690                2695                2700

Leu Tyr Thr His Cys Leu Pro Ser Cys Leu Leu Ser Cys Ser Asp Pro
2705                2710                2715                2720

Asp Gly Leu Cys Arg Gly Thr Ser Pro Glu Ala Pro Ser Thr Cys Lys
                2725                2730                2735

Glu Gly Cys Val Cys Asp Pro Asp Tyr Val Leu Ser Asn Asp Lys Cys
            2740                2745                2750

Val Leu Arg Ile Glu Cys Gly Cys Lys Asp Ala Gln Gly Val Leu Ile
        2755                2760                2765

Pro Ala Gly Lys Thr Trp Ile Asn Arg Gly Cys Thr Gln Ser Cys Ser
   2770                2775                2780

Cys Met Gly Gly Ala Ile Gln Cys Gln Asn Phe Lys Cys Pro Ser Glu
2785                2790                2795                2800

Ala Tyr Cys Gln Asp Met Glu Asp Gly Asn Ser Asn Cys Thr Ser Ile
                2805                2810                2815

Pro Leu Gln Cys Pro Ala His Ser His Tyr Thr Asn Cys Leu Pro Thr
            2820                2825                2830

Cys Gln Pro Ser Cys Ser Asp Pro Asp Gly His Cys Glu Gly Ser Ser
        2835                2840                2845

Thr Lys Ala Pro Ser Ala Cys Lys Glu Gly Cys Val Cys Glu Pro Asp
   2850                2855                2860
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Tyr Val Met Leu Asn Asn Lys Cys Val Pro Arg Ile Glu Cys Gly Cys
2865                2870                2875                2880

Lys Asp Thr Gln Gly Val Leu Ile Pro Ala Asp Lys Thr Trp Ile Asn
                2885                2890                2895

Arg Gly Cys Thr Gln Ser Cys Thr Cys Arg Gly Gly Ala Ile Gln Cys
            2900                2905                2910

Gln Lys Tyr His Cys Ser Ser Gly Thr Tyr Cys Lys Asp Met Glu Asp
        2915                2920                2925

Asp Ser Ser Ser Cys Ala Thr Ile Thr Leu Gln Cys Pro Ala His Ser
    2930                2935                2940

His Phe Thr Asn Cys Leu Pro Pro Cys Gln Pro Ser Cys Leu Asp Ser
2945                2950                2955                2960

Glu Gly His Cys Glu Gly Ser Thr Thr Lys Ala Pro Ser Ala Cys Gln
                2965                2970                2975

Glu Gly Cys Val Cys Glu Pro Asp Tyr Val Val Leu Asn Asn Lys Cys
            2980                2985                2990

Val Pro Arg Ile Glu Cys Gly Cys Lys Asp Ala Gln Gly Val Leu Ile
        2995                3000                3005

Pro Ala Asp Lys Thr Trp Ile Asn Arg Gly Cys Thr Gln Ser Cys Thr
    3010                3015                3020

Cys Lys Gly Gly Ala Ile Gln Cys Gln Lys Phe Gln Cys Pro Ser Glu
3025                3030                3035                3040

Thr Tyr Cys Lys Asp Ile Glu Asp Gly Asn Ser Asn Cys Thr Arg Ile
                3045                3050                3055

Ser Leu Gln Cys Pro Ala Asn Ser Asn Phe Thr Ser Cys Leu Pro Ser
            3060                3065                3070

Cys Gln Pro Ser Cys Ser Asn Thr Asp Val His Cys Glu Gly Ser Ser
        3075                3080                3085

Pro Asn Thr Leu Ser Ser Cys Arg Glu Gly Cys Val Cys Gln Ser Gly
    3090                3095                3100

Tyr Val Leu His Asn Asp Lys Cys Ile Leu Arg Asn Gln Cys Gly Cys
3105                3110                3115                3120

Lys Asp Ala Gln Gly Ala Leu Ile Pro Glu Gly Lys Thr Trp Ile Thr
                3125                3130                3135

Ser Gly Cys Thr Gln Ser Cys Asn Cys Thr Gly Gly Ala Ile Gln Cys
            3140                3145                3150

Gln Asn Phe Gln Cys Pro Leu Lys Thr Tyr Cys Lys Asp Leu Lys Asp
        3155                3160                3165

Gly Ser Ser Asn Cys Thr Asn Ile Pro Leu Gln Cys Pro Ala His Ser
    3170                3175                3180

Arg Tyr Thr Asn Cys Leu Pro Ser Cys Pro Pro Leu Cys Leu Asp Pro
3185                3190                3195                3200
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Glu Gly Leu Cys Glu Gly Thr Ser Pro Lys Val Pro Ser Thr Cys Arg
              3205                3210                3215

Glu Gly Cys Ile Cys Gln Pro Gly Tyr Leu Met His Lys Asn Lys Cys
          3220                3225                3230

Val Leu Arg Ile Phe Cys Gly Cys Lys Asn Thr Gln Gly Ala Phe Ile
       3235                3240                3245

Ser Ala Asp Lys Thr Trp Ile Ser Arg Gly Cys Thr Gln Ser Cys Thr
   3250                3255                3260

Cys Pro Ala Gly Ala Ile His Cys Arg Asn Phe Lys Cys Pro Ser Gly
3265                3270                3275                3280

Thr Tyr Cys Lys Asn Gly Asp Asn Gly Ser Ser Asn Cys Thr Glu Ile
              3285                3290                3295

Thr Leu Gln Cys Pro Thr Asn Ser Gln Phe Thr Asp Cys Leu Pro Ser
          3300                3305                3310

Cys Val Pro Ser Cys Ser Asn Arg Cys Glu Val Thr Ser Pro Ser Val
       3315                3320                3325

Pro Ser Ser Cys Arg Glu Gly Cys Leu Cys Asn His Gly Phe Val Phe
   3330                3335                3340

Ser Glu Asp Lys Cys Val Pro Arg Thr Gln Cys Gly Cys Lys Asp Ala
3345                3350                3355                3360

Arg Gly Ala Ile Ile Pro Ala Gly Lys Thr Trp Thr Ser Lys Gly Cys
              3365                3370                3375

Thr Gln Ser Cys Ala Cys Val Glu Gly Asn Ile Gln Cys Gln Asn Phe
          3380                3385                3390

Gln Cys Pro Pro Glu Thr Tyr Cys Lys Asp Asn Ser Glu Gly Ser Ser
       3395                3400                3405

Thr Cys Thr Lys Ile Thr Leu Gln Cys Pro Ala His Thr Gln Tyr Thr
   3410                3415                3420

Ser Cys Leu Pro Ser Cys Leu Pro Ser Cys Leu Asp Pro Glu Gly Leu
3425                3430                3435                3440

Cys Lys Asp Ile Ser Pro Lys Val Pro Ser Thr Cys Lys Glu Gly Cys
              3445                3450                3455

Val Cys Gln Ser Gly Tyr Val Leu Asn Ser Asp Lys Cys Val Leu Arg
          3460                3465                3470

Ala Glu Cys Asp Cys Lys Asp Ala Gln Gly Ala Leu Ile Pro Ala Gly
       3475                3480                3485

Lys Thr Trp Thr Ser Pro Gly Cys Thr Gln Ser Cys Ala Cys Met Gly
   3490                3495                3500

Gly Ala Val Gln Cys Gln Ser Ser Gln Cys Pro Pro Gly Thr Tyr Cys
3505                3510                3515                3520

Lys Asp Asn Glu Asp Gly Asn Ser Asn Cys Ala Lys Ile Thr Leu Gln
              3525                3530                3535
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Cys Pro Ala His Ser Leu Phe Thr Asn Cys Leu Pro Pro Cys Leu Pro
          3540                3545                3550

Ser Cys Leu Asp Pro Asp Gly Leu Cys Lys Gly Ala Ser Pro Lys Val
       3555                3560                3565

Pro Ser Thr Cys Lys Glu Gly Cys Ile Cys Gln Ser Gly Tyr Val Leu
   3570                3575                3580

Ser Asn Asn Lys Cys Leu Leu Arg Asn Arg Cys Gly Cys Lys Asp Ala
3585                3590                3595                3600

His Gly Ala Leu Ile Pro Glu Asp Lys Thr Trp Val Ser Arg Gly Cys
               3605                3610                3615

Thr Gln Ser Cys Val Cys Thr Gly Gly Ser Ile Gln Cys Leu Ser Ser
          3620                3625                3630

Gln Cys Pro Pro Gly Ala Tyr Cys Lys Asp Asn Glu Asp Gly Ser Ser
       3635                3640                3645

Asn Cys Ala Arg Ile Pro Pro Gln Cys Pro Ala Asn Ser His Tyr Thr
   3650                3655                3660

Asp Cys Phe Pro Pro Cys Pro Pro Ser Cys Ser Asp Pro Glu Gly His
3665                3670                3675                3680

Cys Glu Ala Ser Gly Pro Arg Val Leu Ser Thr Cys Arg Glu Gly Cys
               3685                3690                3695

Leu Cys Asn Pro Gly Phe Val Leu Asp Arg Asp Lys Cys Val Pro Arg
          3700                3705                3710

Val Glu Cys Gly Cys Lys Asp Ala Gln Gly Ala Leu Ile Pro Ser Gly
       3715                3720                3725

Lys Thr Trp Thr Ser Pro Gly Cys Thr Gln Ser Cys Ala Cys Met Gly
   3730                3735                3740

Gly Val Val Gln Cys Gln Ser Ser Gln Cys Pro Pro Gly Thr Tyr Cys
3745                3750                3755                3760

Lys Asp Asn Glu Asp Gly Asn Ser Asn Cys Ala Lys Ile Thr Leu Gln
               3765                3770                3775

Cys Pro Thr His Ser Asn Tyr Thr Asp Cys Leu Pro Phe Cys Leu Pro
          3780                3785                3790

Ser Cys Leu Asp Pro Ser Ala Leu Cys Gly Gly Thr Ser Pro Lys Gly
       3795                3800                3805

Pro Ser Thr Cys Lys Glu Gly Cys Val Cys Gln Pro Gly Tyr Val Leu
   3810                3815                3820

Asp Lys Asp Lys Cys Ile Leu Lys Ile Glu Cys Gly Cys Arg Asp Thr
3825                3830                3835                3840

Gln Gly Ala Val Ile Pro Ala Gly Lys Thr Trp Leu Ser Thr Gly Cys
               3845                3850                3855

Ile Gln Ser Cys Ala Cys Val Glu Gly Thr Ile Gln Cys Gln Asn Phe
          3860                3865                3870
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Gln Cys Pro Pro Gly Thr Tyr Cys Asn His Asn Asn Asn Cys Ala Lys
       3875                3880                3885

Ile Pro Leu Gln Cys Pro Ala His Ser His Phe Thr Ser Cys Leu Pro
   3890                3895                3900

Ser Cys Pro Pro Ser Cys Ala Asn Leu Asp Gly Ser Cys Glu Gln Thr
3905                3910                3915                3920

Ser Pro Lys Val Pro Ser Thr Cys Lys Glu Gly Cys Leu Cys Gln Pro
               3925                3930                3935

Gly Tyr Phe Leu Asn Asn Gly Lys Cys Val Leu Gln Thr His Cys Asp
           3940                3945                3950

Cys Lys Asp Ala Glu Gly Gly Leu Val Pro Ala Gly Lys Thr Trp Thr
       3955                3960                3965

Ser Lys Asp Cys Thr Gln Ser Cys Ala Cys Thr Gly Gly Ala Val Gln
   3970                3975                3980

Cys Gln Asn Phe Gln Cys Pro Leu Gly Thr Tyr Cys Lys Asp Ser Gly
3985                3990                3995                4000

Asp Gly Ser Ser Asn Cys Thr Lys Ile His Lys Gly Ala Met Gly Asp
               4005                4010                4015

Gly Val Leu Met Ala Gly Gly Ile Arg Ala Leu Gln Cys Pro Ala His
           4020                4025                4030

Ser His Phe Thr Ser Cys Leu Pro Ser Cys Pro Pro Ser Cys Ser Asn
       4035                4040                4045

Leu Asp Gly Ser Cys Val Glu Ser Asn Phe Lys Ala Pro Ser Val Cys
   4050                4055                4060

Lys Lys Gly Cys Ile Cys Gln Pro Gly Tyr Leu Leu Asn Asn Asp Lys
4065                4070                4075                4080

Cys Val Leu Arg Ile Gln Cys Gly Cys Lys Asp Thr Gln Gly Gly Leu
               4085                4090                4095

Ile Pro Ala Gly Arg Thr Trp Ile Ser Ser Asp Cys Thr Lys Ser Cys
           4100                4105                4110

Ser Cys Met Gly Gly Ile Ile Gln Cys Arg Asp Phe Gln Cys Pro Pro
       4115                4120                4125

Gly Thr Tyr Cys Lys Glu Ser Asn Asp Ser Ser Arg Thr Cys Ala Lys
   4130                4135                4140

Ile Pro Leu Gln Cys Pro Ala His Ser His Tyr Thr Asn Cys Leu Pro
4145                4150                4155                4160

Ala Cys Ser Arg Ser Cys Thr Asp Leu Asp Gly His Cys Glu Gly Thr
               4165                4170                4175

Ser Pro Lys Val Pro Ser Pro Cys Lys Glu Gly Cys Leu Cys Gln Pro
           4180                4185                4190

Gly Tyr Val Val His Asn His Lys Cys Val Leu Gln Ile His Cys Gly
       4195                4200                4205
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Cys Lys Asp Ala Gln Gly Gly Phe Val Pro Ala Gly Lys Thr Trp Ile
4210 4215 4220

Ser Arg Gly Cys Thr Gln Ser Cys Ala Cys Val Gly Gly Ala Val Gln
4225 4230 4235 4240

Cys His Asn Phe Thr Cys Pro Thr Gly Thr Gln Cys Gln Asn Ser Ser
4245 4250 4255

Cys Ser Lys Ile Thr Val Gln Cys Pro Ala His Ser Gln Tyr Thr Thr
4260 4265 4270

Cys Leu Pro Ser Cys Leu Pro Ser Cys Phe Asp Pro Glu Gly Leu Cys
4275 4280 4285

Gly Gly Ala Ser Pro Arg Ala Pro Ser Thr Cys Arg Glu Gly Cys Val
4290 4295 4300

Cys Glu Ala Asp Tyr Val Leu Arg Glu Asp Lys Cys Val Leu Arg Thr
4305 4310 4315 4320

Gln Cys Gly Cys Lys Asp Ala Gln Gly Asp Leu Ile Pro Ala Asn Lys
4325 4330 4335

Thr Trp Leu Thr Arg Gly Cys Ala Gln Lys Cys Thr Cys Lys Gly Gly
4340 4345 4350

Asn Ile His Cys Trp Asn Phe Lys Cys Pro Leu Gly Thr Glu Cys Lys
4355 4360 4365

Asp Ser Val Asp Gly Gly Ser Asn Cys Thr Lys Ile Ala Leu Gln Cys
4370 4375 4380

Pro Ala His Ser His His Thr Tyr Cys Leu Pro Ser Cys Ile Pro Ser
4385 4390 4395 4400

Cys Ser Asn Val Asn Asp Arg Cys Glu Ser Thr Ser Leu Gln Arg Pro
4405 4410 4415

Ser Thr Cys Ile Glu Gly Cys Leu Cys His Ser Gly Phe Val Phe Ser
4420 4425 4430

Lys Asp Lys Cys Val Pro Arg Thr Gln Cys Gly Cys Lys Asp Ser Gln
4435 4440 4445

Gly Thr Leu Ile Pro Ala Gly Lys Asn Trp Ile Thr Thr Gly Cys Ser
4450 4455 4460

Gln Arg Cys Thr Cys Thr Gly Gly Leu Val Gln Cys His Asp Phe Gln
4465 4470 4475 4480

Cys Pro Ser Gly Ala Glu Cys Gln Asp Ile Glu Asp Gly Asn Ser Asn
4485 4490 4495

Cys Val Glu Ile Thr Val Gln Cys Pro Ala His Ser His Tyr Ser Lys
4500 4505 4510

Cys Leu Pro Pro Cys Gln Pro Ser Cys Ser Asp Pro Asp Gly His Cys
4515 4520 4525

Glu Gly Thr Ser Pro Glu Ala Pro Ser Thr Cys Glu Glu Gly Cys Val
4530 4535 4540

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Cys Glu Pro Asp Tyr Val Leu Ser Asn Asp Lys Cys Val Pro Ser Ser
4545                4550                4555                4560

Glu Cys Gly Cys Lys Asp Ala His Gly Val Leu Ile Pro Glu Ser Lys
                  4565                4570                4575

Thr Trp Val Ser Arg Gly Cys Thr Lys Asn Cys Thr Cys Lys Gly Gly
            4580                4585                4590

Thr Val Gln Cys His Asp Phe Ser Cys Pro Thr Gly Ser Arg Cys Leu
        4595                4600                4605

Asp Asn Asn Glu Gly Asn Ser Asn Cys Val Thr Tyr Ala Leu Lys Cys
    4610                4615                4620

Pro Ala His Ser Leu Tyr Thr Asn Cys Leu Pro Ser Cys Leu Pro Ser
4625                4630                4635                4640

Cys Ser Asp Pro Glu Gly Leu Cys Gly Gly Thr Ser Pro Glu Val Pro
                  4645                4650                4655

Ser Thr Cys Lys Glu Gly Cys Ile Cys Gln Ser Gly Tyr Val Leu His
            4660                4665                4670

Lys Asn Lys Cys Met Leu Arg Ile His Cys Asp Cys Lys Asp Phe Gln
        4675                4680                4685

Gly Ser Leu Ile Lys Thr Gly Gln Thr Trp Ile Ser Ser Gly Cys Ser
    4690                4695                4700

Lys Ile Cys Thr Cys Lys Gly Gly Phe Phe Gln Cys Gln Ser Tyr Lys
4705                4710                4715                4720

Cys Pro Ser Gly Thr Gln Cys Glu Glu Ser Glu Asp Gly Ser Ser Asn
                  4725                4730                4735

Cys Val Ser Ser Thr Met Lys Cys Pro Ala Asn Ser Leu Tyr Thr His
            4740                4745                4750

Cys Leu Pro Thr Cys Leu Pro Ser Cys Ser Asn Pro Asp Gly Arg Cys
        4755                4760                4765

Glu Gly Thr Ser His Lys Ala Pro Ser Thr Cys Arg Glu Gly Cys Val
    4770                4775                4780

Cys Gln Pro Gly Tyr Leu Leu Asn Lys Asp Thr Cys Val His Lys Asn
4785                4790                4795                4800

Gln Cys Gly Cys Lys Asp Ile Arg Gly Asn Ile Ile Pro Ala Gly Asn
                  4805                4810                4815

Thr Trp Ile Ser Ser Asp Cys Thr Gln Ser Cys Ala Cys Thr Asp Gly
            4820                4825                4830

Val Ile Gln Cys Gln Asn Phe Val Cys Pro Ser Gly Ser His Cys Gln
        4835                4840                4845

Tyr Asn Glu Asp Gly Ser Ser Asp Cys Ala Ala Asn Lys Leu Glu Arg
    4850                4855                4860

Cys Thr Ile Phe Gly Asp Pro Tyr Tyr Leu Thr Phe Asp Gly Phe Thr
4865                4870                4875                4880
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Tyr His Phe Leu Gly Arg Met Asn Tyr Tyr Leu Ile Lys Thr Val Asp
                4885                4890                4895

Lys Leu Pro Arg Gly Ile Glu Pro Leu Ile Met Glu Gly Arg Asn Lys
            4900                4905                4910

Ile Ser Pro Lys Gly Ser Ser Thr Leu His Glu Val Thr Thr Ile Val
        4915                4920                4925

Tyr Gly Tyr Lys Ile Gln Leu Gln Glu Glu Leu Val Val Leu Val Asn
    4930                4935                4940

Asp Glu Lys Val Ala Val Pro Tyr Asn Pro Asn Glu His Leu Arg Val
4945                4950                4955                4960

Met Leu Arg Ala Gln Arg Leu Leu Leu Val Thr Asp Phe Glu Met Val
                4965                4970                4975

Leu Asp Phe Asp Gly Lys His Ser Ala Val Ile Ser Leu Pro Thr Thr
            4980                4985                4990

Tyr Arg Gly Leu Thr Arg Gly Leu Cys Gly Asn Tyr Asp Arg Asp Gln
        4995                5000                5005

Ser Asn Glu Leu Met Leu Pro Ser Gly Val Leu Thr Ser Asn Val His
    5010                5015                5020

Val Phe Gly Asn Ser Trp Glu Val Lys Ala Gln His Ala Phe Phe Arg
5025                5030                5035                5040

Phe Pro Arg Ala Leu Pro Glu Asp Glu Glu Arg Asp Glu Glu Pro Asp
                5045                5050                5055

Leu Leu Gln Ser Glu Cys Ser Gln Glu Gln Thr Ala Leu Ile Ser Ser
            5060                5065                5070

Thr Gln Ala Cys Arg Val Leu Val Asp Pro Gln Gly Pro Phe Ala Ala
        5075                5080                5085

Cys His Gln Ile Ile Ala Pro Glu Pro Phe Glu Gln Arg Cys Met Leu
    5090                5095                5100

Asp Met Cys Thr Gly Trp Lys Thr Lys Glu Glu Glu Glu Leu Arg Cys
5105                5110                5115                5120

Arg Val Leu Ser Gly Tyr Ala Ile Ile Cys Gln Glu Ala Gly Ala Asn
                5125                5130                5135

Met Thr Gly Trp Arg Asp His Thr His Cys Ala Met Thr Cys Pro Ala
            5140                5145                5150

Asn Thr Val Tyr Gln Arg Cys Met Thr Pro Cys Pro Ala Ser Cys Ala
        5155                5160                5165

Lys Phe Val Thr Pro Lys Val Cys Glu Gly Pro Cys Val Glu Gly Cys
    5170                5175                5180

Ala Ser Leu Pro Gly Tyr Ile Tyr Ser Asp Thr Gln Ser Leu Pro Val
5185                5190                5195                5200

Thr His Cys Gly Cys Thr Ala Asp Gly Ile Tyr Tyr Lys Leu Gly Asp
                5205                5210                5215
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Ser Phe Val Thr Asn Asp Cys Ser Gln His Cys Thr Cys Ala Ser Gln
          5220                5225                5230

Gly Ile Leu Leu Cys Glu Pro Tyr Gly Cys Arg Ala Gly Glu Ser Cys
       5235                5240                5245

Met Val Ala Asn Phe Thr Arg Gly Cys Phe Gln Asp Ser Pro Cys Leu
   5250                5255                5260

Gln Asn Pro Cys His Asn Asp Gly Arg Cys Glu Glu Gln Gly Ala Thr
5265               5270                5275                5280

Phe Ile Cys His Cys Asp Phe Gly Tyr Gly Gly Glu Phe Cys Thr Glu
               5285                5290                5295

Pro Gln Asp Ile Thr Thr Arg Lys Lys Ile Glu Ala Ser Ser Leu Val
          5300                5305                5310

Ala Ile Leu Pro Gly Val Leu Val Met Val Leu Val Pro Val Leu Leu
       5315                5320                5325

Pro Arg Val Tyr Val Tyr Met Ala Thr Arg Thr Thr Met Gly Arg Arg
   5330                5335                5340

Arg Met Lys Arg Lys Glu Lys Lys Leu Leu Arg Gln Ser Arg Leu Arg
5345               5350                5355                5360

Leu Glu Asp Ala Asp Val Pro Glu Pro Thr Phe Lys Ala Thr Glu Phe
               5365                5370                5375
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<210> 75
<211> 5374
<212> PRT
<213> Mus musculus

<400> 75

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Met Ala Leu Pro Val Trp Thr Leu Met Leu Leu Val Gly Ala Ala Trp
  1               5                  10                  15

Gly Gln Glu Gln Val Pro Ala Trp Arg Pro Asn Ser Pro Asp Leu Gly
            20                  25                  30

Pro Met Val His Thr Ser Arg Glu Asp Ser Ile Leu Ser Lys Cys Asp
        35                  40                  45

Phe Glu Asp Asn Ser Arg Pro Phe Cys Asp Trp Ser Gln Met Ser Ala
    50                  55                  60

Asp Asp Gly Asp Trp Ile Arg Thr Thr Gly Pro Ser Leu Thr Gly Thr
65                  70                  75                  80

Ser Gly Pro Pro Gly Gly Tyr Pro Asn Gly Glu Gly Tyr Tyr Leu His
                85                  90                  95

Met Asp Pro Lys Thr Phe Pro Gln Gly Gly Val Ala Arg Leu Arg Ser
            100                 105                 110

Pro Asp Ile Trp Glu Gln Gly Pro Leu Cys Val His Phe Ala Phe His
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        115                 120                 125

Met Phe Gly Leu Ser Trp Gly Ala Gln Leu Arg Leu Leu Leu Leu Arg
    130                 135                 140

Gly Arg Lys His Leu Arg Pro Tyr Val Leu Trp Lys His Val Asn Thr
145                 150                 155                 160

Gln Ser Pro Ser Trp Met Pro Thr Thr Val Thr Val Pro Ala Asp His
                165                 170                 175

Asp Ile Pro Ser Trp Leu Met Phe Glu Gly Met Arg Gly Asn Thr Ala
            180                 185                 190

Tyr Leu Asp Ile Ser Leu Asp Gly Leu Ser Ile Gln Arg Gly Thr Cys
        195                 200                 205

Asn Gln Val Cys Met Ser Gln Met Cys Thr Phe Asp Thr Leu Asn Asp
    210                 215                 220

Leu Cys Gly Trp Ser Trp Val Pro Thr Ala Thr Gly Ala Lys Trp Thr
225                 230                 235                 240

Gln Lys Lys Gly Pro Thr Gly Lys Gln Gly Val Gly Pro Ala Glu Asp
                245                 250                 255

Phe Ser Asn Pro Gly Asn Gly Tyr Tyr Met Leu Leu Asp Ser Thr Asn
            260                 265                 270

Ala Arg Pro Gly Gln Lys Ala Val Leu Leu Ser Pro Leu Ser His Ser
        275                 280                 285

Arg Gly Cys Met Thr Leu Ser Phe His Tyr Ile Met His Gly Gln Gly
    290                 295                 300

His Glu Glu Gly Leu Phe Val Tyr Ala Thr Phe Leu Gly Asn Ile Arg
305                 310                 315                 320

Lys Tyr Thr Leu Phe Ser Gly His Pro Gly Pro Asp Trp Gln Ala Val
                325                 330                 335

Ser Val Asn Tyr Thr Gly Gln Gly Gln Ile Gln Phe Met Val Val Gly
            340                 345                 350

Met Phe Gly Asn Ile Pro Glu Pro Ala Ile Ala Val Asp Ala Ile Ser
        355                 360                 365

Ile Ala Pro Cys Gly Glu Ser Phe Pro Gln Cys Asp Phe Glu Asp Arg
    370                 375                 380

Val His Pro Phe Cys Asp Trp Asn Gln Val Tyr Gly Asp Met Gly His
385                 390                 395                 400

Trp Ser Trp Gly Ser Lys Ser Val Pro Thr Leu Ile Ala Gly Ser Pro
                405                 410                 415

Arg Glu Phe Pro Tyr Gly Gly Glu His Tyr Ile Phe Phe Asp Ser Val
            420                 425                 430

Lys Leu Ser Gln Glu Gly Gln Ser Ala Arg Leu Val Ser Pro Pro Phe
        435                 440                 445

Cys Ala Pro Gly Asp Ile Cys Val Glu Phe Ala Tyr His Met Tyr Gly
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    450                 455                 460

Leu Gly Lys Gly Thr Thr Leu Lys Leu Leu Leu Gly Ser Pro Ala Gly
465                 470                 475                 480

Ser Phe Pro Ile Pro Leu Trp Asn Arg Val Gly Ser Gln Ser Ser Gly
                485                 490                 495

Trp Met Asn Ser Ser Val Thr Ile Pro Lys Gly Tyr Gln Gln Pro Met
            500                 505                 510

Gln Leu Phe Ile Glu Ala Thr Arg Gly Thr Ser Thr Ala Phe Val Val
        515                 520                 525

Ala Leu Asn Phe Ile Leu Ile Ser His Gly Pro Cys Arg Val Leu Leu
    530                 535                 540

Gln Thr Glu Ile Pro Ser Ser Pro Leu Leu Pro Pro Thr Gly Pro Ser
545                 550                 555                 560

Glu Ser Thr Val Pro Thr Leu Pro Met Glu Gln Pro Thr Ser Pro Thr
                565                 570                 575

Lys Ala Thr Thr Val Thr Ile Glu Ile Pro Thr Thr Pro Thr Glu Glu
            580                 585                 590

Ala Thr Ile Pro Thr Glu Thr Thr Thr Val Pro Thr Glu Val Ile Asn
        595                 600                 605

Val Ser Pro Lys Glu Thr Ser Ile Pro Pro Glu Val Thr Ile Pro Thr
    610                 615                 620

Glu Val Ile Thr Val Ser Pro Glu Glu Ile Ile Ser Pro Thr Glu Val
625                 630                 635                 640

Thr Pro Val Pro Thr Asp Val Thr Ala Ala Tyr Val Glu Ala Thr Asn
                645                 650                 655

Ala Ser Pro Glu Glu Thr Ser Val Pro Pro Glu Val Thr Ile Leu Thr
            660                 665                 670

Glu Val Thr Thr Val Ser Pro Glu Glu Thr Thr Val Pro Thr Glu Val
        675                 680                 685

Pro Ile Val Leu Ile Glu Ala Thr Ala Phe Pro Thr Gly Glu Thr Thr
    690                 695                 700

Leu Tyr Thr Glu Val Pro Thr Val Pro Thr Glu Val Thr Gly Val His
705                 710                 715                 720

Thr Glu Val Thr Asn Val Ser Pro Glu Glu Thr Ser Val Pro Thr Glu
                725                 730                 735

Glu Thr Ile Ser Thr Glu Val Thr Thr Val Ser Pro Glu Glu Thr Thr
            740                 745                 750

Leu Pro Thr Glu Val Pro Thr Val Ser Thr Glu Val Thr Asn Val Ser
        755                 760                 765

Pro Glu Glu Thr Ser Val Pro Pro Glu Glu Thr Ile Leu Thr Glu Ile
    770                 775                 780

Thr Thr Val Ser Pro Glu Glu Thr Val Phe Pro Thr Glu Gly Thr Thr
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785 790 795 800

Leu Pro Thr Glu Val Leu Thr Val Pro Ile Glu Val Thr Thr Phe Pro
805 810 815

Thr Gly Glu Thr Thr Val Pro Thr Glu Val Pro Thr Val Ser Thr Glu
820 825 830

Met Thr Gly Val His Thr Glu Val Thr Thr Val Phe Pro Glu Glu Thr
835 840 845

Ser Ile Pro Thr Glu Val Ala Thr Val Leu Pro Ala Ser Ile Pro Pro
850 855 860

Glu Glu Thr Thr Thr Pro Thr Glu Val Thr Thr Thr Pro Pro Glu Glu
865 870 875 880

Thr Thr Ile Pro Ala Glu Val Thr Thr Val Pro Pro Val Ser Ile Pro
885 890 895

Ser Glu Glu Thr Thr Thr Pro Thr Glu Val Thr Thr Thr Pro Pro Glu
900 905 910

Glu Thr Thr Ile Pro Ala Glu Val Thr Thr Val Pro Pro Val Ser Ile
915 920 925

Pro Ser Glu Glu Thr Thr Thr Pro Thr Glu Val Thr Thr Thr Pro Pro
930 935 940

Glu Glu Thr Thr Ile Pro Ala Glu Val Thr Thr Val Pro Pro Val Ser
945 950 955 960

Ile Pro Ser Glu Glu Thr Thr Ile Pro Thr Glu Val Thr Thr Val Pro
965 970 975

Pro Glu Glu Thr Thr Ile Pro Ala Glu Val Thr Thr Val Pro Pro Val
980 985 990

Ser Ile Pro Ser Glu Glu Thr Thr Ile Pro Thr Glu Val Thr Thr Val
995 1000 1005

Pro Pro Glu Glu Thr Thr Ile Pro Ala Glu Val Thr Thr Thr Pro Pro
1010 1015 1020

Glu Glu Thr Thr Ile Pro Thr Glu Val Thr Thr Val Pro Pro Ala Ser
1025 1030 1035 1040

Ile Pro Pro Glu Glu Thr Ala Ser Leu Thr Glu Val Thr Thr Thr Pro
1045 1050 1055

Pro Glu Glu Thr Thr Thr Pro Thr Glu Val Thr Thr Val Pro Pro Glu
1060 1065 1070

Lys Thr Thr Ile Pro Thr Glu Val Thr Thr Val Pro Pro Ala Ser Ile
1075 1080 1085

Phe Pro Glu Glu Thr Thr Val Pro Pro Glu Glu Thr Thr Ile Ala Ser
1090 1095 1100

Glu Glu Thr Thr Val Ser Thr Gln Glu Thr Thr Leu Leu Thr Glu Gln
1105 1110 1115 1120

Ser Ala Val Thr Gln Thr Ser Ile Ala Cys Arg Pro Pro Cys Pro Ser

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                1125                1130                1135

Pro Pro Leu Met Pro Ile Gly Pro Leu Leu Ser Lys Pro Pro Gly Val
            1140                1145                1150

Ser Met Phe Ser Leu Ala Pro Thr Thr Gly Val Ser Thr Thr Glu Ser
        1155                1160                1165

Cys Pro Pro Asn Ala His Ile Glu Leu Cys Ala Cys Pro Ala Ser Cys
    1170                1175                1180

Glu Ser Pro Lys Pro Ser Cys Gln Pro Pro Cys Ile Pro Gly Cys Val
1185                1190                1195                1200

Cys Asn Pro Gly Phe Leu Phe Ser Asn Asn Gln Cys Ile Asn Glu Ser
                1205                1210                1215

Ser Cys Asn Cys Pro Tyr Asn Asn Lys Tyr Tyr Lys Pro Gly Glu Glu
            1220                1225                1230

Trp Phe Thr Pro Asn Cys Thr Glu Arg Cys Arg Cys Leu Pro Gly Ser
        1235                1240                1245

Leu Met Glu Cys Gln Ile Ser Gln Cys Gly Thr His Thr Val Cys Gln
    1250                1255                1260

Leu Lys Ser Asp Gln Tyr Gln Cys Glu Pro Tyr Gly Lys Ala Thr Cys
1265                1270                1275                1280

Leu Val Tyr Gly Asp Leu His Phe Val Thr Phe Asp Glu Arg His Ile
                1285                1290                1295

Gly Phe Thr Gly Thr Cys Thr Tyr Ile Leu Thr Gln Thr Cys Ser Asn
            1300                1305                1310

Ser Thr Asp His Phe Phe Arg Ile Thr Ala Asn Thr Glu Glu Arg Gly
        1315                1320                1325

Val Glu Gly Val Ser Cys Leu Asp Lys Val Val Ile Ser Leu Pro Glu
    1330                1335                1340

Thr Thr Val Thr Met Ile Ser Gly Arg His Thr Leu Ile Gly Asp Gln
1345                1350                1355                1360

Glu Val Thr Leu Pro Ala Ile Leu Ser Asp Asp Thr Tyr Val Gly Leu
                1365                1370                1375

Ser Gly Arg Phe Val Glu Leu Arg Thr Thr Phe Gly Leu Arg Val Arg
            1380                1385                1390

Trp Asp Gly Asp Gln Gln Leu Phe Val Thr Val Ser Ser Thr Phe Ser
        1395                1400                1405

Gly Lys Leu Cys Gly Phe Cys Gly Asn Tyr Asp Gly Asp Ser Ser Asn
    1410                1415                1420

Asp Asn Leu Lys Ser Asp Gly Met Met Thr His Asp Glu Glu Glu Leu
1425                1430                1435                1440

Arg Leu Ser Trp Gln Val Glu Glu Asp Glu Asp Lys Asp Trp Val Ser
                1445                1450                1455

Ser Arg Cys Gln Lys Lys Lys Asn Pro Pro Ser Cys Asp Ala Ala Leu
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          1460                1465                1470

Gly Ser Thr Met Ser Gly Pro Lys Leu Cys Gly Gln Leu Val Asn Pro
       1475                1480                1485

Ser Gly Pro Phe Glu Ala Cys Leu Leu His Leu Lys Ala Ser Ser Phe
   1490                1495                1500

Leu Asp Asn Cys Val Thr Asp Met Cys Ser Phe Gln Gly Leu Gln Gln
1505                1510                1515                1520

Lys Leu Cys Ala His Met Ser Ala Met Thr Ala Thr Cys Gln Asp Ala
               1525                1530                1535

Gly Tyr Pro Val Lys Pro Trp Arg Glu Pro Gln Phe Cys Pro Leu Val
           1540                1545                1550

Cys Pro Lys Asn Ser Arg Tyr Ser Leu Cys Ala Lys Pro Cys Pro Glu
       1555                1560                1565

Thr Cys His Pro Ile Ser Thr Thr Gln His Cys Ser Asp Lys Cys Val
   1570                1575                1580

Glu Gly Cys Glu Cys Asp Pro Gly Phe Ile Leu Ser Gly Ser Glu Cys
1585                1590                1595                1600

Val Pro Ser Ser Gln Cys Gly Cys Thr Ser Phe Gln Gly Arg Tyr Phe
               1605                1610                1615

Lys Val Gln Glu Gln Trp Phe Asn Pro Asp Cys Lys Glu Ile Cys Thr
           1620                1625                1630

Cys Glu Ser His Asn His Ile Leu Cys Lys Pro Trp Lys Cys Lys Ala
       1635                1640                1645

Gln Glu Ala Cys Ser Tyr Lys Asn Gly Val Leu Gly Cys His Ala Gln
   1650                1655                1660

Gly Ala Ala Thr Cys Met Val Ser Gly Asp Pro His Tyr Leu Thr Phe
1665                1670                1675                1680

Asp Gly Ala Leu His His Phe Met Gly Thr Cys Thr Tyr Val Leu Thr
               1685                1690                1695

Gln Pro Cys Trp Ser Lys Ser Gln Glu Asn Asn Phe Val Val Ser Ala
           1700                1705                1710

Thr Asn Glu Ile His Asp Gly Asn Leu Glu Val Ser Tyr Val Lys Ala
       1715                1720                1725

Val His Val Gln Val Phe Asp Leu Lys Ile Ser Met Phe Lys Gly Gln
   1730                1735                1740

Lys Val Val Leu Asn Asn Gln Arg Val Val Leu Pro Val Trp Pro Ser
1745                1750                1755                1760

Gln Gly Arg Val Thr Ile Arg Leu Ser Gly Ile Phe Val Leu Leu Tyr
               1765                1770                1775

Thr Asn Phe Gly Leu Gln Val Arg Tyr Asp Gly Arg His Leu Val Glu
           1780                1785                1790

Val Thr Val Pro Ser Ser Tyr Thr Gly Ser Leu Cys Gly Leu Cys Gly
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      1795                1800                1805

Asn Tyr Asn Asn Asn Ser Met Asp Asp Asn Leu Arg Val Asp Met Lys
   1810                1815                1820

Pro Ala Gly Asn Ser Leu Leu Leu Gly Ala Ala Trp Lys Ile Leu Glu
1825                1830                1835                1840

Ala Ser Asp Pro Gly Cys Phe Leu Val Gly Gly Lys Pro Ser Arg Cys
                1845                1850                1855

Ala Asp Ser Asp Met Asp Asp Val Trp Thr Lys Lys Cys Ala Ile Leu
           1860                1865                1870

Met Asn Pro Leu Gly Pro Phe Ser Asn Cys His Glu Ala Val Pro Pro
       1875                1880                1885

Gln Ala Ser Phe Ser Ser Cys Val Tyr Gly Gln Cys Glu Thr Asn Gly
   1890                1895                1900

Asp Asn Leu Thr Leu Cys His Ser Leu Gln Ala Tyr Ala Ser Leu Cys
1905                1910                1915                1920

Ala Gln Ala Gly Gln Val Thr Thr Trp Arg Asn Ser Thr Phe Cys Pro
                1925                1930                1935

Met Arg Cys Pro Pro Arg Ser Ser Tyr Asn Pro Cys Ala Asn Ser Cys
           1940                1945                1950

Pro Ala Thr Cys Leu Thr Leu Ser Thr Pro Arg Asp Cys Pro Thr Leu
       1955                1960                1965

Pro Cys Val Glu Gly Cys Glu Cys Gln Ser Gly His Ile Leu Ser Gly
   1970                1975                1980

Thr Thr Cys Val Pro Leu Arg Gln Cys Gly Cys Ser Asp Gln Asp Gly
1985                1990                1995                2000

Ser Tyr His Leu Leu Gly Glu Ser Trp Tyr Thr Glu Lys Thr Cys Thr
                2005                2010                2015

Thr Leu Cys Thr Cys Ser Ala His Ser Asn Ile Thr Cys Ser Pro Thr
           2020                2025                2030

Ala Cys Lys Ala Asn His Val Cys Leu Arg Gln Glu Gly Leu Leu Arg
       2035                2040                2045

Cys Ala Ala Glu Met Gly Glu Cys Arg Ile Ser Glu Asp Ser Gln Ile
   2050                2055                2060

Val Ser Phe Asp Asp His Ser His Pro Ile Gln Asp Thr Cys Thr Tyr
2065                2070                2075                2080

Ile Leu Val Lys Val Cys His Pro Asn Thr Asn Met Pro Phe Phe Met
                2085                2090                2095

Ile Ser Ala Lys Thr Asp Ile Asn Thr Asn Gly Lys Asn Lys Thr Phe
           2100                2105                2110

Gly Val Tyr Gln Leu Tyr Ile Asp Ile Phe Asn Phe His Ile Thr Leu
       2115                2120                2125

Gln Lys Asp His Leu Val Leu Ile Ser Leu Ile Asn Asp Ser Ile Val
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2130                2135                2140

Thr Leu Pro Thr Thr Thr His Ile Pro Gly Val Ser Val Met Thr Glu
2145                2150                2155                2160

Asp Val Tyr Thr Ile Val Thr Ile Lys Asp Glu Ile Gln Val Lys Phe
                2165                2170                2175

Glu Ser Asn Asn Phe Leu Asp Val Lys Ile Pro Ala Ser Ser Asn Gly
            2180                2185                2190

Lys Val Cys Gly Val Cys Gly Asn Phe Asn Gly Glu Glu Glu Asp Glu
        2195                2200                2205

Leu Met Thr Pro Ser Gly Glu Leu Ala Glu Asp Glu Gln Glu Phe Met
    2210                2215                2220

Asn Ser Trp Lys Asp Lys Ser Met Asp Pro Asn Cys Gln Lys Ile Glu
2225                2230                2235                2240

Gly Gln Asn Leu Gln Val Glu Gln Gln Glu Ile Met Asn Gly Lys Cys
                2245                2250                2255

Arg Pro Ile Asp Phe Glu Lys Ala Gln Ala Asn Cys Gln Thr Ala Leu
            2260                2265                2270

Gln Gly Pro Ala Trp Ala His Cys Ser Ser Arg Val Pro Ile Lys Pro
        2275                2280                2285

Phe Leu Leu Lys Cys Met Asn Ser Phe Cys Glu Phe Arg Glu Leu Phe
    2290                2295                2300

Arg Ala Leu Cys Asp Ser Leu Gln Ser Phe Glu Asp Ala Cys Gln Asn
2305                2310                2315                2320

Gln Gly Leu Lys Pro Pro Ile Trp Arg Asn Ser Ser Phe Cys Pro Leu
                2325                2330                2335

Glu Cys Pro Ala His Ser His Tyr Thr Asn Cys Leu Pro Ser Cys Pro
            2340                2345                2350

Pro Ser Cys Leu Asp Pro Asp Ser Arg Cys Glu Gly Ser Gly His Lys
        2355                2360                2365

Val Pro Ala Thr Cys Arg Glu Gly Cys Ile Cys Gln Pro Asp Tyr Val
    2370                2375                2380

Leu Leu Asn Asp Lys Cys Val Leu Arg Ser His Cys Gly Cys Lys Asp
2385                2390                2395                2400

Ala Gln Gly Val Phe Ile Pro Ala Gly Lys Thr Trp Ile Ser Glu Asp
                2405                2410                2415

Cys Thr Gln Ser Cys Thr Cys Met Lys Gly Ser Met Arg Cys Trp Asp
            2420                2425                2430

Phe Gln Cys Pro Pro Gly Thr Tyr Cys Lys Asn Ser Asn Asp Gly Ser
        2435                2440                2445

Ser Asn Cys Val Lys Ile Ser Leu Gln Cys Pro Ala His Ser Lys Phe
    2450                2455                2460

Thr Asp Cys Leu Pro Pro Cys His Pro Ser Cys Ser Asp Pro Asp Gly
```

2465 2470 2475 2480

His Cys Glu Gly Ile Ser Thr Asn Ala His Ser Asn Cys Lys Glu Gly
2485 2490 2495

Cys Val Cys Gln Pro Gly Tyr Val Leu Arg Asn Asp Lys Cys Val Leu
2500 2505 2510

Arg Ile Glu Cys Gly Cys Gln His Thr Gln Gly Gly Phe Ile Pro Ala
2515 2520 2525

Gly Lys Ser Trp Thr Ser Arg Gly Cys Ser Gln Ser Cys Asp Cys Met
2530 2535 2540

Glu Gly Val Ile Arg Cys Gln Asn Phe Gln Cys Pro Ser Gly Thr Tyr
2545 2550 2555 2560

Cys Gln Asp Ile Glu Asp Gly Thr Ser Asn Cys Ala Asn Ile Thr Leu
2565 2570 2575

Gln Cys Pro Ala His Ser Ser Phe Thr Asn Cys Leu Pro Pro Cys Gln
2580 2585 2590

Pro Ser Cys Ser Asp Pro Glu Gly His Cys Gly Gly Ser Thr Thr Lys
2595 2600 2605

Ala Pro Ser Ala Cys Gln Glu Gly Cys Val Cys Glu Pro Asp Tyr Val
2610 2615 2620

Val Leu Asn Asn Lys Cys Val Pro Arg Ile Glu Cys Gly Cys Lys Asp
2625 2630 2635 2640

Ala Gln Gly Val Leu Ile Pro Ala Asp Lys Ile Trp Ile Asn Lys Gly
2645 2650 2655

Cys Thr Gln Thr Cys Ala Cys Val Thr Gly Thr Ile His Cys Arg Asp
2660 2665 2670

Phe Gln Cys Pro Ser Gly Thr Tyr Cys Lys Asp Ile Lys Asp Asp Ala
2675 2680 2685

Ser Asn Cys Thr Glu Ile Thr Leu Gln Cys Pro Asp His Ser Leu Tyr
2690 2695 2700

Thr His Cys Leu Pro Ser Cys Leu Pro Ser Cys Ser Asp Pro Asp Gly
2705 2710 2715 2720

Leu Cys Arg Gly Thr Ser Pro Glu Ala Pro Ser Thr Cys Lys Glu Gly
2725 2730 2735

Cys Val Cys Asp Pro Asp Tyr Val Leu Ser Asn Asp Lys Cys Val Leu
2740 2745 2750

Arg Ile Glu Cys Gly Cys Lys Asp Ala Gln Gly Val Leu Ile Pro Ala
2755 2760 2765

Gly Lys Thr Trp Ile Asn Arg Gly Cys Thr Gln Ser Cys Ser Cys Met
2770 2775 2780

Gly Gly Ala Ile Gln Cys Gln Asn Phe Lys Cys Pro Ser Glu Ala Tyr
2785 2790 2795 2800

Cys Gln Asp Leu Glu Asp Gly Asn Ser Asn Cys Thr Ser Ile Pro Leu

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                2805                2810                2815

Gln Cys Pro Ala His Ser His Tyr Thr Asn Cys Leu Pro Thr Cys Gln
            2820                2825                2830

Pro Ser Cys Ser Asp Pro Asp Gly His Cys Glu Gly Ser Ser Thr Lys
        2835                2840                2845

Ala Pro Ser Ala Cys Lys Glu Gly Cys Val Cys Glu Pro Asp Tyr Val
    2850                2855                2860

Met Leu Asn Asn Lys Cys Val Pro Arg Ile Glu Cys Gly Cys Lys Asp
2865                2870                2875                2880

Thr Gln Gly Val Leu Ile Pro Ala Asp Lys Thr Trp Ile Asn Arg Gly
                2885                2890                2895

Cys Thr Gln Ser Cys Thr Cys Lys Gly Gly Ala Ile Gln Cys Gln Lys
            2900                2905                2910

Tyr His Cys Ser Ser Gly Thr Tyr Cys Lys Asp Met Glu Asp Asp Ser
        2915                2920                2925

Ser Ser Cys Ala Thr Ile Thr Leu Gln Cys Pro Ala His Ser His Phe
    2930                2935                2940

Thr Asn Cys Leu Pro Pro Cys Gln Pro Ser Cys Leu Asp Ser Glu Gly
2945                2950                2955                2960

His Cys Glu Gly Ser Thr Thr Lys Ala Pro Ser Ala Cys Gln Glu Gly
                2965                2970                2975

Cys Val Cys Glu Pro Asp Tyr Val Val Leu Asn Asn Lys Cys Val Pro
            2980                2985                2990

Arg Ile Glu Cys Gly Cys Lys Asp Ala Gln Gly Val Leu Ile Pro Ala
        2995                3000                3005

Asp Lys Thr Trp Ile Asn Arg Gly Cys Thr Gln Ser Cys Thr Cys Lys
    3010                3015                3020

Gly Gly Ala Ile Gln Cys Gln Lys Phe Gln Cys Pro Ser Glu Thr Tyr
3025                3030                3035                3040

Cys Lys Asp Ile Glu Asp Gly Asn Ser Asn Cys Thr Arg Ile Ser Leu
                3045                3050                3055

Gln Cys Pro Ala Asn Ser Asn Phe Thr Ser Cys Leu Pro Ser Cys Gln
            3060                3065                3070

Pro Ser Cys Ser Asn Thr Asp Val His Cys Glu Gly Ser Ser Pro Asn
        3075                3080                3085

Thr Leu Ser Ser Cys Arg Glu Gly Cys Val Cys Gln Ser Gly Tyr Val
    3090                3095                3100

Leu His Asn Asp Lys Cys Ile Leu Arg Asn Gln Cys Gly Cys Lys Asp
3105                3110                3115                3120

Ala Gln Gly Ala Leu Ile Pro Glu Gly Lys Thr Trp Ile Thr Ser Gly
                3125                3130                3135

Cys Thr Gln Ser Cys Asn Cys Thr Gly Gly Ala Ile Gln Cys Gln Asn
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          3140                3145                3150

Phe Gln Cys Pro Leu Lys Thr Tyr Cys Lys Asp Leu Lys Asp Gly Ser
       3155                3160                3165

Ser Asn Cys Thr Asn Ile Pro Leu Gln Cys Pro Ala His Ser Arg Tyr
   3170                3175                3180

Thr Asn Cys Leu Pro Ser Cys Pro Pro Ser Cys Leu Asp Pro Glu Gly
3185                3190                3195                3200

Leu Cys Glu Gly Thr Ser Pro Lys Val Pro Ser Thr Cys Arg Glu Gly
               3205                3210                3215

Cys Ile Cys Gln Pro Gly Tyr Leu Met His Lys Asn Lys Cys Val Leu
          3220                3225                3230

Arg Ile Phe Cys Gly Cys Lys Asn Thr Gln Gly Ala Phe Ile Ser Ala
       3235                3240                3245

Asp Lys Thr Trp Ile Ser Arg Gly Cys Thr Gln Ser Cys Thr Cys Ser
   3250                3255                3260

Ala Gly Ala Ile His Cys Arg Asn Phe Lys Cys Pro Ser Gly Thr Tyr
3265                3270                3275                3280

Cys Lys Asn Gly Asp Asn Gly Ser Ser Asn Cys Thr Glu Ile Thr Leu
               3285                3290                3295

Gln Cys Pro Thr Asn Ser Gln Phe Thr Asp Cys Leu Pro Ser Cys Val
          3300                3305                3310

Pro Ser Cys Ser Asn Arg Cys Glu Val Thr Ser Pro Ser Val Pro Ser
       3315                3320                3325

Ser Cys Arg Glu Gly Cys Leu Cys Asn His Gly Phe Val Phe Ser Glu
   3330                3335                3340

Asp Lys Cys Val Pro Arg Thr Gln Cys Gly Cys Lys Asp Ala Arg Gly
3345                3350                3355                3360

Ala Ile Ile Pro Ala Gly Lys Thr Trp Thr Ser Lys Gly Cys Thr Gln
               3365                3370                3375

Ser Cys Ala Cys Val Glu Gly Asn Ile Gln Cys Gln Asn Phe Gln Cys
          3380                3385                3390

Pro Pro Glu Thr Tyr Cys Lys Asp Asn Ser Glu Gly Ser Ser Thr Cys
       3395                3400                3405

Thr Lys Ile Thr Leu Gln Cys Pro Ala His Thr Gln Tyr Thr Ser Cys
   3410                3415                3420

Leu Pro Ser Cys Leu Pro Ser Cys Leu Asp Pro Glu Gly Leu Cys Lys
3425                3430                3435                3440

Asp Ile Ser Pro Lys Val Pro Ser Thr Cys Lys Glu Gly Cys Val Cys
               3445                3450                3455

Gln Ser Gly Tyr Val Leu Asn Ser Asp Lys Cys Val Leu Arg Ala Glu
          3460                3465                3470

Cys Asp Cys Lys Asp Ala Gln Gly Ala Leu Ile Pro Ala Gly Lys Thr
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      3475                3480                3485

Trp Thr Ser Pro Gly Cys Thr Gln Ser Cys Ala Cys Met Gly Gly Ala
   3490                3495                3500

Val Gln Cys Gln Ser Ser Gln Cys Pro Pro Gly Thr Tyr Cys Lys Asp
3505                3510                3515                3520

Asn Glu Asp Gly Asn Ser Asn Cys Ala Lys Ile Thr Leu Gln Cys Pro
                3525                3530                3535

Ala His Ser Leu Phe Thr Asn Cys Leu Pro Ser Cys Leu Pro Ser Cys
           3540                3545                3550

Leu Asp Pro Asp Gly Leu Cys Lys Gly Ala Ser Pro Lys Val Pro Ser
       3555                3560                3565

Thr Cys Lys Glu Gly Cys Ile Cys Gln Ser Gly Tyr Val Leu Ser Asn
   3570                3575                3580

Asn Lys Cys Leu Leu Arg Asn Arg Cys Gly Cys Lys Asp Ala His Gly
3585                3590                3595                3600

Ala Leu Ile Pro Glu Asp Lys Thr Trp Val Ser Arg Gly Cys Thr Gln
                3605                3610                3615

Ser Cys Val Cys Thr Gly Gly Ser Ile Gln Cys Leu Ser Phe Gln Cys
           3620                3625                3630

Pro Pro Gly Ala Tyr Cys Lys Asp Asn Glu Asp Gly Ser Ser Asn Cys
       3635                3640                3645

Ala Arg Ile Pro Pro Gln Cys Pro Ala Asn Ser His Tyr Thr Asp Cys
   3650                3655                3660

Phe Pro Pro Cys Pro Pro Ser Cys Ser Asp Pro Glu Gly His Cys Glu
3665                3670                3675                3680

Ala Ser Gly Pro Arg Val Pro Ser Thr Cys Arg Glu Gly Cys Leu Cys
                3685                3690                3695

Asn Pro Gly Phe Val Leu Asp Arg Asp Lys Cys Val Pro Arg Val Glu
           3700                3705                3710

Cys Gly Cys Lys Asp Ala Gln Gly Ala Leu Ile Pro Ser Gly Lys Thr
       3715                3720                3725

Trp Thr Ser Pro Gly Arg Thr Gln Ser Cys Ala Cys Met Gly Gly Val
   3730                3735                3740

Val Gln Cys Gln Ser Ser Gln Cys Pro Pro Gly Thr Tyr Cys Lys Asp
3745                3750                3755                3760

Asn Glu Asp Gly Asn Ser Asn Cys Ala Lys Ile Thr Leu Gln Cys Pro
                3765                3770                3775

Thr His Ser Asn Tyr Thr Asp Cys Leu Pro Phe Cys Leu Pro Ser Cys
           3780                3785                3790

Leu Asp Pro Ser Ala Leu Cys Gly Gly Thr Ser Pro Lys Gly Pro Ser
       3795                3800                3805

Thr Cys Lys Glu Gly Cys Val Cys Gln Pro Gly Tyr Val Leu Asp Lys
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   3810                3815                3820

Asp Lys Cys Ile Leu Lys Ile Glu Cys Gly Cys Lys Asp Thr Gln Gly
3825                3830                3835                3840

Ala Val Ile Pro Ala Gly Lys Thr Trp Leu Ser Thr Gly Cys Ile Gln
                3845                3850                3855

Ser Cys Ala Cys Val Glu Gly Thr Ile Gln Cys Gln Asn Phe Gln Cys
            3860                3865                3870

Pro Pro Gly Thr Tyr Cys Asn His Asn Asn Asn Cys Ala Lys Ile Pro
        3875                3880                3885

Leu Gln Cys Pro Ala His Ser His Phe Thr Ser Cys Leu Pro Ser Cys
    3890                3895                3900

Pro Pro Ser Cys Ala Asn Leu Asp Gly Ser Cys Glu Gln Thr Ser Pro
3905                3910                3915                3920

Lys Val Pro Ser Thr Cys Lys Glu Gly Cys Leu Cys Gln Pro Gly Tyr
                3925                3930                3935

Phe Leu Asn Asn Gly Lys Cys Val Leu Gln Thr His Cys Asp Cys Lys
            3940                3945                3950

Asp Ala Glu Gly Gly Leu Val Pro Ala Gly Lys Thr Trp Thr Ser Lys
        3955                3960                3965

Asp Cys Thr Gln Ser Cys Ala Cys Thr Gly Gly Ala Val Gln Cys Gln
    3970                3975                3980

Asn Phe Gln Cys Pro Leu Gly Thr Tyr Cys Lys Asp Ser Gly Asp Gly
3985                3990                3995                4000

Ser Ser Asn Cys Thr Lys Ile His Lys Gly Ala Met Gly Asp Gly Val
                4005                4010                4015

Leu Met Ala Gly Gly Ile Arg Ala Leu Gln Cys Pro Ala His Ser His
            4020                4025                4030

Phe Thr Ser Cys Leu Pro Ser Cys Pro Pro Ser Cys Ser Asn Leu Asp
        4035                4040                4045

Gly Ser Cys Val Glu Ser Asn Phe Lys Ala Pro Ser Val Cys Lys Lys
    4050                4055                4060

Gly Cys Ile Cys Gln Pro Gly Tyr Leu Leu Asn Asn Asp Lys Cys Val
4065                4070                4075                4080

Leu Arg Ile Gln Cys Gly Cys Lys Asp Thr Gln Gly Gly Leu Ile Pro
                4085                4090                4095

Ala Gly Arg Thr Trp Ile Ser Ser Asp Cys Thr Lys Ser Cys Ser Cys
            4100                4105                4110

Met Gly Gly Thr Ile Gln Cys Arg Asp Phe Gln Cys Pro Pro Gly Thr
        4115                4120                4125

Tyr Cys Lys Glu Ser Asn Asp Ser Ser Arg Thr Cys Ala Lys Ile Pro
    4130                4135                4140

Leu Gln Cys Pro Ala His Ser His Tyr Thr Asn Cys Leu Pro Ala Cys
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4145 4150 4155 4160

Ser Arg Ser Cys Thr Asp Leu Asp Gly His Cys Glu Gly Thr Ser Pro
4165 4170 4175

Lys Val Pro Ser Pro Cys Lys Glu Gly Cys Leu Cys Gln Pro Gly Tyr
4180 4185 4190

Val Val His Asn His Lys Cys Val Leu Gln Ile His Cys Gly Cys Lys
4195 4200 4205

Asp Ala Gln Gly Gly Phe Val Pro Ala Gly Lys Thr Trp Ile Ser Arg
4210 4215 4220

Gly Cys Thr Gln Ser Cys Ala Cys Val Gly Gly Ala Val Gln Cys His
4225 4230 4235 4240

Asn Phe Thr Cys Pro Thr Gly Thr Gln Cys Gln Asn Ser Ser Cys Ser
4245 4250 4255

Lys Ile Thr Val Gln Cys Pro Ala His Ser His Tyr Thr Thr Cys Leu
4260 4265 4270

Pro Ser Cys Leu Pro Ser Cys Phe Asp Pro Glu Gly Leu Cys Gly Gly
4275 4280 4285

Ala Ser Pro Arg Ala Pro Ser Thr Cys Arg Glu Gly Cys Val Cys Glu
4290 4295 4300

Ala Asp Tyr Val Leu Arg Glu Asp Lys Cys Val Leu Arg Thr Gln Cys
4305 4310 4315 4320

Gly Cys Lys Asp Ala Gln Gly Asp Leu Ile Pro Ala Asn Lys Thr Trp
4325 4330 4335

Leu Thr Arg Gly Cys Ala Gln Lys Cys Thr Cys Lys Gly Gly Asn Ile
4340 4345 4350

His Cys Trp Asn Phe Lys Cys Pro Leu Gly Thr Glu Cys Lys Asp Ser
4355 4360 4365

Val Asp Gly Gly Ser Asn Cys Thr Lys Ile Ala Leu Gln Cys Pro Ala
4370 4375 4380

His Ser His His Thr Tyr Cys Leu Pro Ser Cys Ile Pro Ser Cys Ser
4385 4390 4395 4400

Asn Val Asn Asp Arg Cys Glu Ser Thr Ser Leu Gln Arg Pro Ser Thr
4405 4410 4415

Cys Ile Glu Gly Cys Leu Cys His Ser Gly Phe Val Phe Ser Lys Asp
4420 4425 4430

Lys Cys Val Pro Arg Thr Gln Cys Gly Cys Lys Asp Ser Gln Gly Thr
4435 4440 4445

Leu Ile Pro Ala Gly Lys Asn Trp Ile Thr Thr Gly Cys Ser Gln Arg
4450 4455 4460

Cys Thr Cys Thr Gly Gly Leu Val Gln Cys His Asp Phe Glu Cys Pro
4465 4470 4475 4480

Ser Gly Ala Glu Cys Gln Asp Ile Glu Asp Gly Asn Ser Asn Cys Val

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                4485                4490                4495

Glu Ile Thr Val Gln Cys Pro Ala His Ser His Tyr Ser Lys Cys Leu
            4500                4505                4510

Pro Pro Cys Gln Pro Ser Cys Ser Asp Pro Asp Gly His Cys Glu Gly
        4515                4520                4525

Thr Ser Pro Glu Ala Pro Ser Thr Cys Glu Glu Gly Cys Val Cys Glu
    4530                4535                4540

Pro Asp Tyr Val Leu Ser Asn Asp Lys Cys Val Pro Ser Ser Glu Cys
4545                4550                4555                4560

Gly Cys Lys Asp Ala His Gly Val Leu Ile Pro Glu Ser Lys Thr Trp
                4565                4570                4575

Val Ser Arg Gly Cys Thr Lys Asn Cys Thr Cys Lys Gly Gly Thr Val
            4580                4585                4590

Gln Cys His Asp Phe Ser Cys Pro Thr Gly Ser Arg Cys Leu Asp Asn
        4595                4600                4605

Asn Glu Gly Asn Ser Asn Cys Val Thr Tyr Ala Leu Lys Cys Pro Ala
    4610                4615                4620

His Ser Leu Tyr Thr Asn Cys Leu Pro Ser Cys Leu Pro Ser Cys Ser
4625                4630                4635                4640

Asp Pro Glu Gly Leu Cys Gly Gly Thr Ser Pro Glu Val Pro Ser Thr
                4645                4650                4655

Cys Lys Glu Gly Cys Ile Cys Gln Ser Gly Tyr Val Leu His Lys Asn
            4660                4665                4670

Lys Cys Met Leu Arg Ile His Cys Asp Cys Lys Asp Phe Gln Gly Ser
        4675                4680                4685

Leu Ile Lys Thr Gly Gln Thr Trp Ile Ser Ser Gly Cys Ser Lys Ile
    4690                4695                4700

Cys Thr Cys Lys Gly Gly Phe Phe Gln Cys Gln Ser Tyr Lys Cys Pro
4705                4710                4715                4720

Ser Gly Thr Gln Cys Glu Glu Ser Glu Asp Gly Ser Ser Asn Cys Val
                4725                4730                4735

Ser Ser Thr Met Lys Cys Pro Ala Asn Ser Leu Tyr Thr His Cys Leu
            4740                4745                4750

Pro Thr Cys Leu Pro Ser Cys Ser Asn Pro Asp Gly Arg Cys Glu Gly
        4755                4760                4765

Thr Ser His Lys Ala Pro Ser Thr Cys Arg Glu Gly Cys Val Cys Gln
    4770                4775                4780

Pro Gly Tyr Leu Leu Asn Lys Asp Thr Cys Val His Lys Asn Gln Cys
4785                4790                4795                4800

Gly Cys Lys Asp Ile Arg Gly Asn Ile Ile Pro Ala Gly Asn Thr Trp
                4805                4810                4815

Ile Ser Ser Asp Cys Thr Gln Ser Cys Ala Cys Thr Asp Gly Val Ile
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          4820                4825                4830

Gln Cys Gln Asn Phe Val Cys Pro Ser Gly Ser His Cys Gln Tyr Asn
       4835                4840                4845

Glu Asp Gly Ser Ser Asp Cys Ala Ala Asn Lys Leu Glu Arg Cys Thr
   4850                4855                4860

Ile Phe Gly Asp Pro Tyr Tyr Leu Thr Phe Asp Gly Phe Thr Tyr His
4865                4870                4875                4880

Phe Leu Gly Arg Met Asn Tyr Tyr Leu Ile Lys Thr Val Asp Lys Leu
               4885                4890                4895

Pro Arg Gly Ile Glu Pro Leu Ile Met Glu Gly Arg Asn Lys Ile Ser
           4900                4905                4910

Pro Lys Gly Ser Ser Thr Leu His Glu Val Thr Thr Ile Val Tyr Gly
       4915                4920                4925

Tyr Lys Ile Gln Leu Gln Glu Glu Leu Val Val Leu Val Asn Asp Glu
   4930                4935                4940

Lys Val Ala Val Pro Tyr Asn Pro Asn Glu His Leu Arg Val Met Leu
4945                4950                4955                4960

Arg Ala Gln Arg Leu Leu Leu Val Thr Asp Phe Glu Met Val Leu Asp
               4965                4970                4975

Phe Asp Gly Lys His Ser Ala Val Ile Ser Leu Pro Thr Thr Tyr Arg
           4980                4985                4990

Gly Leu Thr Arg Gly Leu Cys Gly Asn Tyr Asp Arg Asp Gln Ser Asn
       4995                5000                5005

Glu Leu Met Leu Pro Ser Gly Val Leu Thr Ser Asn Val His Val Phe
   5010                5015                5020

Gly Asn Ser Trp Glu Val Lys Ala Gln His Ala Phe Phe Arg Phe Pro
5025                5030                5035                5040

Arg Ala Leu Pro Glu Asp Glu Glu Arg Asp Glu Glu Pro Asp Leu Leu
               5045                5050                5055

Gln Ser Glu Cys Ser Gln Glu Gln Thr Ala Leu Ile Ser Ser Thr Gln
           5060                5065                5070

Ala Cys Arg Val Leu Val Asp Pro Gln Gly Pro Phe Ala Ala Cys His
       5075                5080                5085

Gln Ile Ile Ala Pro Glu Pro Phe Glu Gln Arg Cys Met Leu Asp Met
   5090                5095                5100

Cys Thr Gly Trp Lys Thr Lys Glu Glu Glu Glu Leu Arg Cys Arg Val
5105                5110                5115                5120

Leu Ser Gly Tyr Ala Ile Ile Cys Gln Glu Ala Gly Ala Asn Met Thr
               5125                5130                5135

Gly Trp Arg Asp His Thr His Cys Ala Met Thr Cys Pro Ala Asn Thr
           5140                5145                5150

Val Tyr Gln Arg Cys Met Thr Pro Cys Pro Ala Ser Cys Ala Lys Phe
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      5155                5160                5165

Val Thr Pro Lys Val Cys Glu Gly Pro Cys Val Glu Gly Cys Ala Ser
   5170                5175                5180

Leu Pro Gly Tyr Ile Tyr Ser Asp Thr Gln Ser Leu Pro Val Thr His
5185                5190                5195                5200

Cys Gly Cys Thr Ala Asp Gly Ile Tyr Tyr Lys Leu Gly Asp Ser Phe
               5205                5210                5215

Val Thr Asn Asp Cys Ser Gln His Cys Thr Cys Ala Ser Gln Gly Ile
           5220                5225                5230

Leu Leu Cys Glu Pro Tyr Gly Cys Arg Ala Gly Glu Ser Cys Met Val
       5235                5240                5245

Ala Asn Phe Thr Arg Gly Cys Phe Gln Asp Ser Pro Cys Leu Gln Asn
   5250                5255                5260

Pro Cys His Asn Asp Gly Arg Cys Glu Glu Gln Gly Ala Thr Phe Ile
5265                5270                5275                5280

Cys His Cys Asp Phe Gly Tyr Gly Gly Glu Phe Cys Thr Glu Pro Gln
               5285                5290                5295

Asp Ile Thr Thr Arg Lys Lys Ile Glu Ala Ser Ser Leu Val Ala Ile
           5300                5305                5310

Leu Pro Gly Val Leu Val Met Val Leu Val Pro Val Leu Leu Pro Arg
       5315                5320                5325

Val Tyr Val Tyr Met Ala Thr Arg Thr Thr Met Gly Arg Arg Arg Met
   5330                5335                5340

Lys Arg Lys Glu Lys Lys Leu Leu Arg Gln Ser Arg Leu Arg Leu Glu
5345                5350                5355                5360

Asp Ala Asp Val Pro Glu Pro Thr Phe Lys Ala Thr Glu Phe
               5365                5370


<210> 76
<211> 2601
<212> PRT
<213> Homo sapiens

<400> 76
Met Val Pro Pro Val Trp Thr Leu Leu Leu Leu Val Gly Ala Ala Leu
  1               5                  10                  15

Phe Arg Lys Glu Lys Pro Pro Asp Gln Lys Leu Val Val Arg Ser Ser
             20                  25                  30

Arg Asp Asn Tyr Val Leu Thr Gln Cys Asp Phe Glu Asp Asp Ala Lys
         35                  40                  45

Pro Leu Cys Asp Trp Ser Gln Val Ser Ala Asp Asp Glu Asp Trp Val
     50                  55                  60

Arg Ala Ser Gly Pro Ser Pro Thr Gly Ser Thr Gly Ala Pro Gly Gly
 65                  70                  75                  80
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Tyr Pro Asn Gly Glu Gly Ser Tyr Leu His Met Glu Ser Asn Ser Phe
                 85                  90                  95

His Arg Gly Gly Val Ala Arg Leu Leu Ser Pro Asp Leu Trp Glu Gln
            100                 105                 110

Gly Pro Leu Cys Val His Phe Ala His His Met Phe Gly Leu Ser Trp
        115                 120                 125

Gly Ala Gln Leu Arg Leu Leu Leu Leu Ser Gly Glu Glu Gly Arg Arg
    130                 135                 140

Pro Asp Val Leu Trp Lys His Trp Asn Thr Gln Arg Pro Ser Trp Met
145                 150                 155                 160

Leu Thr Thr Val Thr Val Pro Ala Gly Phe Thr Leu Pro Thr Arg Leu
                165                 170                 175

Met Phe Glu Gly Thr Arg Gly Ser Thr Ala Tyr Leu Asp Ile Ala Leu
            180                 185                 190

Asp Ala Leu Ser Ile Arg Arg Gly Ser Cys Asn Arg Val Cys Met Met
        195                 200                 205

Gln Thr Cys Ser Phe Asp Ile Pro Asn Asp Leu Cys Asp Trp Thr Trp
    210                 215                 220

Ile Pro Thr Ala Ser Gly Ala Lys Trp Thr Gln Lys Lys Gly Ser Ser
225                 230                 235                 240

Gly Lys Pro Gly Val Gly Pro Asp Gly Asp Phe Ser Ser Pro Gly Ser
                245                 250                 255

Gly Cys Tyr Met Leu Leu Asp Pro Lys Asn Ala Arg Pro Gly Gln Lys
            260                 265                 270

Ala Val Leu Leu Ser Pro Val Ser Leu Ser Ser Gly Cys Leu Ser Phe
        275                 280                 285

Ser Phe His Tyr Ile Leu Arg Gly Gln Ser Pro Gly Ala Ala Leu His
    290                 295                 300

Ile Tyr Ala Ser Val Leu Gly Ser Ile Arg Lys His Thr Leu Phe Ser
305                 310                 315                 320

Gly Gln Pro Gly Pro Asn Trp Gln Ala Val Ser Val Asn Tyr Thr Ala
                325                 330                 335

Val Gly Arg Ile Gln Phe Ala Val Val Gly Val Phe Gly Lys Thr Pro
            340                 345                 350

Glu Pro Ala Val Ala Val Asp Ala Thr Ser Ile Ala Pro Cys Gly Glu
        355                 360                 365

Gly Phe Pro Gln Cys Asp Phe Glu Asp Asn Ala His Pro Phe Cys Asp
    370                 375                 380

Trp Val Gln Thr Ser Gly Asp Gly Gly His Trp Ala Leu Gly His Lys
385                 390                 395                 400

Asn Gly Pro Val His Gly Met Gly Pro Ala Gly Gly Phe Pro Asn Ala
                405                 410                 415
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Gly Gly His Tyr Ile Tyr Leu Glu Ala Asp Glu Phe Ser Gln Ala Gly
            420                 425                 430

Gln Ser Val Arg Leu Val Ser Arg Pro Phe Cys Ala Pro Gly Asp Ile
        435                 440                 445

Cys Val Glu Phe Ala Tyr His Met Tyr Gly Leu Gly Glu Gly Thr Met
    450                 455                 460

Leu Glu Leu Leu Leu Gly Ser Pro Ala Gly Ser Pro Pro Ile Pro Leu
465                 470                 475                 480

Trp Lys Arg Val Gly Ser Gln Arg Pro Tyr Trp Gln Asn Thr Ser Val
                485                 490                 495

Thr Val Pro Ser Gly His Gln Gln Pro Met Gln Leu Ile Phe Lys Gly
            500                 505                 510

Ile Gln Gly Ser Asn Thr Ala Ser Val Val Ala Met Gly Phe Ile Leu
        515                 520                 525

Ile Asn Pro Gly Thr Cys Pro Val Lys Val Leu Pro Glu Leu Pro Pro
    530                 535                 540

Val Ser Pro Val Ser Ser Thr Gly Pro Ser Glu Thr Thr Gly Leu Thr
545                 550                 555                 560

Glu Asn Pro Thr Ile Ser Thr Lys Lys Pro Thr Val Ser Ile Glu Lys
                565                 570                 575

Pro Ser Val Thr Thr Glu Lys Pro Thr Val Pro Lys Glu Lys Pro Thr
            580                 585                 590

Ile Pro Thr Glu Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro
        595                 600                 605

Ser Glu Lys Pro Asn Met Pro Ser Glu Lys Pro Thr Ile Pro Ser Glu
    610                 615                 620

Lys Pro Thr Ile Leu Thr Glu Lys Pro Thr Ile Pro Ser Glu Lys Pro
625                 630                 635                 640

Thr Ile Pro Ser Glu Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Val
                645                 650                 655

Pro Thr Glu Glu Pro Thr Thr Pro Thr Glu Glu Thr Thr Thr Ser Met
            660                 665                 670

Glu Glu Pro Val Ile Pro Thr Glu Lys Pro Ser Ile Pro Thr Glu Lys
        675                 680                 685

Pro Ser Ile Pro Thr Glu Lys Pro Thr Ile Ser Met Glu Glu Thr Ile
    690                 695                 700

Ile Ser Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys Pro Thr Ile Pro
705                 710                 715                 720

Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Ser Thr Ile Ser Pro Glu
                725                 730                 735

Lys Pro Thr Thr Pro Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro
            740                 745                 750
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Thr Ile Ser Pro Glu Lys Pro Thr Thr Pro Thr Glu Lys Pro Thr Ile
        755                 760                 765

Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu Lys Pro Thr Ile Pro Thr
    770                 775                 780

Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr Ile Ser Thr Glu Glu
785                 790                 795                 800

Pro Thr Thr Pro Thr Glu Glu Thr Thr Ile Ser Thr Glu Lys Pro Ser
                805                 810                 815

Ile Pro Met Glu Lys Pro Thr Leu Pro Thr Glu Glu Thr Thr Thr Ser
            820                 825                 830

Val Glu Glu Thr Thr Ile Ser Thr Glu Lys Leu Thr Ile Pro Met Glu
        835                 840                 845

Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro
    850                 855                 860

Thr Ile Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu Lys Leu Thr Ile
865                 870                 875                 880

Pro Thr Glu Lys Pro Thr Ile Pro Ile Glu Glu Thr Thr Ile Ser Thr
                885                 890                 895

Glu Lys Leu Thr Ile Pro Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys
            900                 905                 910

Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr
        915                 920                 925

Ile Pro Thr Glu Glu Thr Thr Ile Ser Thr Glu Lys Leu Thr Ile Pro
    930                 935                 940

Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu
945                 950                 955                 960

Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Leu
                965                 970                 975

Thr Ile Pro Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr Ile
            980                 985                 990

Pro Thr Glu Lys Leu Thr Ala Leu Arg Pro Pro His Pro Ser Pro Thr
        995                1000                1005

Ala Thr Gly Leu Ala Ala Leu Val Met Ser Pro His Ala Pro Ser Thr
   1010                1015                1020

Pro Met Thr Ser Val Ile Leu Gly Thr Thr Thr Thr Ser Arg Ser Ser
1025                1030                1035                1040

Thr Glu Arg Cys Pro Pro Asn Ala Arg Tyr Glu Ser Cys Ala Cys Pro
                1045                1050                1055

Ala Ser Cys Lys Ser Pro Arg Pro Ser Cys Gly Pro Leu Cys Arg Glu
            1060                1065                1070

Gly Cys Val Cys Asn Pro Gly Phe Leu Phe Ser Asp Asn His Cys Ile
        1075                1080                1085
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Gln Ala Ser Ser Cys Asn Cys Phe Tyr Asn Asn Asp Tyr Tyr Glu Pro
   1090                1095                1100

Gly Ala Glu Trp Phe Ser Pro Asn Cys Thr Glu His Cys Arg Cys Trp
1105                1110                1115                1120

Pro Gly Ser Arg Val Glu Cys Gln Ile Ser Gln Cys Gly Thr His Thr
               1125                1130                1135

Val Cys Gln Leu Lys Asn Gly Gln Tyr Gly Cys His Pro Tyr Ala Gly
           1140                1145                1150

Thr Ala Thr Cys Leu Val Tyr Gly Asp Pro His Tyr Val Thr Phe Asp
       1155                1160                1165

Gly Arg His Phe Gly Phe Met Gly Lys Cys Thr Tyr Ile Leu Ala Gln
   1170                1175                1180

Pro Cys Gly Asn Ser Thr Asp Pro Phe Phe Arg Val Thr Ala Lys Asn
1185                1190                1195                1200

Glu Glu Gln Gly Gln Glu Gly Val Ser Cys Leu Ser Lys Val Tyr Val
               1205                1210                1215

Thr Leu Pro Glu Ser Thr Val Thr Leu Leu Lys Gly Arg Arg Thr Leu
           1220                1225                1230

Val Gly Gly Gln Gln Val Thr Leu Pro Ala Ile Pro Ser Lys Gly Val
       1235                1240                1245

Phe Leu Gly Ala Ser Gly Arg Phe Val Glu Leu Gln Thr Glu Phe Gly
   1250                1255                1260

Leu Arg Val Arg Trp Asp Gly Asp Gln Gln Leu Tyr Val Thr Val Ser
1265                1270                1275                1280

Ser Thr Tyr Ser Gly Lys Leu Cys Gly Leu Cys Gly Asn Tyr Asp Gly
               1285                1290                1295

Asn Ser Asp Asn Asp His Leu Lys Leu Asp Gly Ser Pro Ala Gly Asp
           1300                1305                1310

Lys Glu Glu Leu Gly Asn Ser Trp Gln Thr Asp Gln Asp Glu Asp Gln
       1315                1320                1325

Glu Cys Gln Lys Tyr Gln Val Val Asn Ser Pro Ser Cys Asp Ser Ser
   1330                1335                1340

Leu Gln Ser Ser Met Ser Gly Pro Gly Phe Cys Gly Arg Leu Val Asp
1345                1350                1355                1360

Thr His Gly Pro Phe Glu Thr Cys Leu Leu His Val Lys Ala Ala Ser
               1365                1370                1375

Phe Phe Asp Ser Cys Met Leu Asp Met Cys Gly Phe Gln Gly Leu Gln
           1380                1385                1390

His Leu Leu Cys Thr His Met Ser Thr Met Thr Thr Thr Cys Gln Asp
       1395                1400                1405

Ala Gly His Ala Val Lys Pro Trp Arg Glu Pro His Phe Cys Pro Met
   1410                1415                1420
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Ala Cys Pro Pro Asn Ser Lys Tyr Ser Leu Cys Ala Lys Pro Cys Pro
1425                1430                1435                1440

Asp Thr Cys His Ser Gly Phe Ser Gly Met Phe Cys Ser Asp Arg Cys
                1445                1450                1455

Val Glu Ala Cys Glu Cys Asn Pro Gly Phe Val Leu Ser Gly Leu Glu
            1460                1465                1470

Cys Ile Pro Arg Ser Gln Cys Gly Cys Leu His Pro Ala Gly Ser Tyr
        1475                1480                1485

Phe Lys Val Gly Glu Arg Trp Tyr Lys Pro Gly Cys Lys Glu Leu Cys
    1490                1495                1500

Val Cys Glu Ser Asn Asn Arg Ile Arg Cys Gln Pro Trp Arg Cys Arg
1505                1510                1515                1520

Ala Gln Glu Phe Cys Gly Gln Gln Asp Gly Ile Tyr Gly Cys His Ala
                1525                1530                1535

Gln Gly Ala Ala Thr Cys Thr Ala Ser Gly Asp Pro His Tyr Leu Thr
            1540                1545                1550

Phe Asp Gly Ala Leu His His Phe Met Gly Thr Cys Thr Tyr Val Leu
        1555                1560                1565

Thr Arg Pro Cys Trp Ser Arg Ser Gln Asp Ser Tyr Phe Val Val Ser
    1570                1575                1580

Ala Thr Asn Glu Asn Arg Gly Gly Ile Leu Glu Val Ser Tyr Ile Lys
1585                1590                1595                1600

Ala Val His Val Thr Val Phe Asp Leu Ser Ile Ser Leu Leu Arg Gly
                1605                1610                1615

Cys Lys Val Met Leu Asn Gly His Arg Val Ala Leu Pro Val Trp Leu
            1620                1625                1630

Ala Gln Gly Arg Val Thr Ile Arg Leu Ser Ser Asn Leu Val Leu Leu
        1635                1640                1645

Tyr Thr Asn Phe Gly Leu Gln Val Arg Tyr Asp Gly Ser His Leu Val
    1650                1655                1660

Glu Val Thr Val Pro Ser Ser Tyr Gly Gly Gln Leu Cys Gly Leu Cys
1665                1670                1675                1680

Gly Asn Tyr Asn Asn Asn Ser Leu Asp Asp Asn Leu Arg Pro Asp Arg
                1685                1690                1695

Lys Leu Ala Gly Asp Ser Met Gln Leu Gly Ala Ala Trp Lys Leu Pro
            1700                1705                1710

Glu Ser Ser Glu Pro Gly Cys Phe Leu Val Gly Gly Lys Pro Ser Ser
        1715                1720                1725

Cys Gln Glu Asn Ser Met Ala Asp Ala Trp Asn Lys Asn Cys Ala Ile
    1730                1735                1740

Leu Ile Asn Pro Gln Gly Pro Phe Ser Gln Cys His Gln Val Val Pro
1745                1750                1755                1760
```

```
Pro Gln Ser Ser Phe Ala Ser Cys Val His Gly Gln Cys Gly Thr Lys
                1765                1770                1775

Gly Asp Thr Thr Ala Leu Cys Arg Ser Leu Gln Ala Tyr Ala Ser Leu
            1780                1785                1790

Cys Ala Gln Ala Gly Gln Ala Pro Ala Trp Arg Asn Arg Thr Phe Cys
        1795                1800                1805

Pro Met Arg Cys Pro Pro Gly Ser Ser Tyr Ser Pro Cys Ser Ser Pro
    1810                1815                1820

Cys Pro Asp Thr Cys Ser Ser Ile Asn Asn Pro Arg Asp Cys Pro Lys
1825                1830                1835                1840

Ala Leu Pro Cys Ala Glu Ser Cys Glu Cys Gln Lys Gly His Ile Leu
                1845                1850                1855

Ser Gly Thr Ser Cys Val Pro Leu Gly Gln Cys Gly Cys Thr Asp Pro
            1860                1865                1870

Ala Gly Ser Tyr His Pro Val Gly Glu Arg Trp Tyr Thr Glu Asn Thr
        1875                1880                1885

Cys Thr Arg Leu Cys Thr Cys Ser Val His Asn Asn Ile Thr Cys Phe
    1890                1895                1900

Gln Ser Thr Cys Lys Pro Asn Gln Ile Cys Trp Ala Leu Asp Gly Leu
1905                1910                1915                1920

Leu Arg Cys Arg Ala Ser Gly Val Gly Val Cys Gln Leu Pro Gly Glu
                1925                1930                1935

Ser His Tyr Val Ser Phe Asp Gly Ser Asn His Ser Ile Pro Asp Ala
            1940                1945                1950

Cys Thr Leu Val Leu Val Lys Val Cys His Pro Ala Met Ala Leu Pro
        1955                1960                1965

Phe Phe Lys Ile Ser Ala Lys His Glu Lys Glu Glu Gly Gly Thr Glu
    1970                1975                1980

Ala Phe Arg Leu His Glu Val Tyr Ile Asp Ile Tyr Asp Ala Gln Val
1985                1990                1995                2000

Thr Leu Gln Lys Gly His Arg Val Leu Ile Asn Ser Lys Gln Val Thr
                2005                2010                2015

Leu Pro Ala Ile Ser Gln Ile Pro Gly Val Ser Val Lys Ser Ser Ser
            2020                2025                2030

Ile Tyr Ser Ile Val Asn Ile Lys Ile Gly Val Gln Val Lys Phe Asp
        2035                2040                2045

Gly Asn His Leu Leu Glu Ile Glu Ile Pro Thr Thr Tyr Tyr Gly Lys
    2050                2055                2060

Val Cys Gly Met Cys Gly Asn Phe Asn Asp Glu Glu Glu Asp Glu Leu
2065                2070                2075                2080

Met Met Pro Ser Asp Glu Val Ala Asn Ser Asp Ser Glu Phe Val Asn
                2085                2090                2095
```

```
Ser Trp Lys Asp Lys Asp Ile Asp Pro Ser Cys Gln Ser Leu Leu Val
          2100                2105                2110

Asp Glu Gln Gln Ile Pro Ala Glu Gln Gln Glu Asn Pro Ser Gly Asn
       2115                2120                2125

Cys Arg Ala Ala Asp Leu Arg Arg Ala Arg Glu Lys Cys Glu Ala Ala
   2130                2135                2140

Leu Arg Ala Pro Val Trp Ala Gln Cys Ala Ser Arg Ile Asp Leu Thr
2145                2150                2155                2160

Pro Phe Leu Val Asp Cys Ala Asn Thr Leu Cys Glu Phe Gly Gly Leu
               2165                2170                2175

Tyr Gln Ala Leu Cys Gln Ala Leu Gln Ala Phe Gly Ala Thr Cys Gln
          2180                2185                2190

Ser Gln Gly Leu Lys Pro Pro Leu Trp Arg Asn Ser Ser Phe Cys Pro
       2195                2200                2205

Leu Glu Cys Pro Ala Tyr Ser Ser Tyr Thr Asn Cys Leu Pro Ser Cys
   2210                2215                2220

Ser Pro Ser Cys Trp Asp Leu Asp Gly Arg Cys Glu Gly Ala Lys Val
2225                2230                2235                2240

Pro Ser Ala Cys Ala Glu Gly Cys Ile Cys Gln Pro Gly Tyr Val Leu
               2245                2250                2255

Ser Glu Asp Lys Cys Val Pro Arg Ser Gln Cys Gly Cys Lys Asp Ala
          2260                2265                2270

His Gly Gly Ser Ile Pro Leu Gly Lys Ser Trp Val Ser Ser Gly Cys
       2275                2280                2285

Thr Glu Lys Cys Val Cys Thr Gly Gly Ala Ile Gln Cys Gly Asp Phe
   2290                2295                2300

Arg Cys Pro Ser Gly Ser His Cys Gln Leu Thr Ser Asp Asn Ser Asn
2305                2310                2315                2320

Ser Asn Cys Val Ser Asp Lys Ser Glu Gln Cys Ser Val Tyr Gly Asp
               2325                2330                2335

Pro Arg Tyr Leu Thr Phe Asp Gly Phe Ser Tyr Arg Leu Gln Gly Arg
          2340                2345                2350

Met Thr Tyr Val Leu Ile Lys Thr Val Asp Val Leu Pro Glu Gly Val
       2355                2360                2365

Glu Pro Leu Leu Val Glu Gly Arg Asn Lys Met Asp Pro Pro Arg Ser
   2370                2375                2380

Ser Ile Phe Leu Gln Glu Val Ile Thr Thr Val Tyr Gly Tyr Lys Val
2385                2390                2395                2400

Gln Leu Gln Ala Gly Leu Glu Leu Val Val Asn Asn Gln Lys Met Ala
               2405                2410                2415

Val Pro Tyr Arg Pro Asn Glu His Leu Arg Val Thr Leu Trp Gly Gln
          2420                2425                2430
```

```
Arg Leu Tyr Leu Val Thr Asp Phe Glu Leu Val Val Ser Phe Gly Gly
       2435                2440                2445

Arg Lys Asn Ala Val Ile Ser Leu Pro Ser Met Tyr Glu Gly Leu Val
   2450                2455                2460

Ser Gly Leu Cys Gly Asn Tyr Asp Lys Asn Arg Lys Asn Asp Met Met
2465                2470                2475                2480

Leu Pro Ser Gly Ala Leu Thr Gln Asn Leu Asn Thr Phe Gly Asn Ser
               2485                2490                2495

Trp Glu Val Lys Thr Glu Asp Ala Leu Leu Arg Phe Pro Arg Ala Ile
           2500                2505                2510

Pro Ala Glu Glu Glu Gly Gln Gly Ala Glu Leu Gly Leu Arg Thr Gly
       2515                2520                2525

Leu Gln Val Ser Glu Cys Ser Pro Glu Gln Leu Ala Ser Asn Ser Thr
   2530                2535                2540

Gln Ala Cys Arg Val Leu Ala Asp Pro Gln Gly Pro Phe Ala Ala Cys
2545                2550                2555                2560

His Gln Thr Val Ala Pro Glu Pro Phe Gln Glu His Cys Val Leu Asp
               2565                2570                2575

Leu Cys Ser Ala Gln Asp Pro Arg Glu Gln Glu Glu Leu Arg Cys Gln
           2580                2585                2590

Val Leu Ser Gly Trp Ala Ala Ala Phe
       2595                2600
```

<210> 77
<211> 170
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: MAM domain sequence

<400> 77

```
Cys Asp Phe Glu Asp Gly Ser His Pro Phe Cys Gly Trp Ser Gln Asp
  1               5                  10                  15

Ser Gly Asp Asp Gly Asp Asp Leu Gln Trp Thr Arg Val Asn Ser Ala
            20                  25                  30

Thr Gly Gly Ser Thr Gly Pro Arg Gly Asp His Thr Thr Gly Asn Gly
        35                  40                  45

His Tyr Met Tyr Val Asp Thr Ser Ser Gly Leu Leu Gln Glu Gly Gln
    50                  55                  60

Lys Ala Arg Leu Leu Ser Pro Pro Leu Pro Pro Asn Arg Ser Pro Glu
65                  70                  75                  80

Cys Cys Leu Thr Phe Trp Tyr His Met Tyr Gly Ser Gly Val Gly Thr
                85                  90                  95

Pro Gly Leu Asn Val Tyr Val Arg Glu Asn Gly Glu Thr Leu Leu Trp
```

100 105 110

Ser Arg Ser Gly His Gln Gly Gly Gln Trp Leu Leu Ala Glu Val Thr
115 120 125

Leu Pro Thr Phe Ser Thr Lys Pro Phe Gln Val Val Phe Glu Gly Thr
130 135 140

Arg Gly Gly Gly Ser Arg Gly Gly Ile Ala Leu Asp Asp Ile Ser Leu
145 150 155 160

Ser Thr His Ile Glu Gly Pro Cys Asn Gln
165 170

<210> 78
<211> 170
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: MAM domain sequence

<400> 78
Cys Asp Phe Glu Asp Gly Ser His Pro Phe Cys Gly Trp Ser Gln Asp
1 5 10 15

Ser Gly Asp Asp Gly Asp Asp Leu Gln Trp Thr Arg Val Asn Ser Ala
20 25 30

Thr Gly Gly Ser Thr Gly Pro Arg Gly Asp His Thr Thr Gly Asn Gly
35 40 45

His Tyr Met Tyr Val Asp Thr Ser Ser Gly Leu Leu Gln Glu Gly Gln
50 55 60

Lys Ala Arg Leu Leu Ser Pro Pro Leu Pro Pro Asn Arg Ser Pro Glu
65 70 75 80

Cys Cys Leu Thr Phe Trp Tyr His Met Tyr Gly Ser Gly Val Gly Thr
85 90 95

Pro Gly Leu Asn Val Tyr Val Arg Glu Asn Gly Glu Thr Leu Leu Trp
100 105 110

Ser Arg Ser Gly His Gln Gly Gly Gln Trp Leu Leu Ala Glu Val Thr
115 120 125

Leu Pro Thr Phe Ser Thr Lys Pro Phe Gln Val Val Phe Glu Gly Thr
130 135 140

Arg Gly Gly Gly Ser Arg Gly Gly Ile Ala Leu Asp Asp Ile Ser Leu
145 150 155 160

Ser Thr His Ile Glu Gly Pro Cys Asn Gln
165 170

<210> 79
<211> 812
<212> PRT
<213> Homo sapiens

<400> 79

```
Met Gly Trp Arg Pro Arg Arg Ala Arg Gly Thr Pro Leu Leu Leu Leu
  1               5                  10                  15

Leu Leu Leu Leu Leu Leu Trp Pro Val Pro Gly Ala Gly Val Leu Gln
            20                  25                  30

Gly His Ile Pro Gly Gln Pro Val Thr Pro His Trp Val Leu Asp Gly
        35                  40                  45

Gln Pro Trp Arg Thr Val Ser Leu Glu Glu Pro Val Ser Lys Pro Asp
     50                  55                  60

Met Gly Leu Val Ala Leu Glu Ala Glu Gly Gln Glu Leu Leu Leu Glu
 65                  70                  75                  80

Leu Glu Lys Asn His Arg Leu Leu Ala Pro Gly Tyr Ile Glu Thr His
                85                  90                  95

Tyr Gly Pro Asp Gly Gln Pro Val Val Leu Ala Pro Asn His Thr Asp
            100                 105                 110

His Cys His Tyr Gln Gly Arg Val Arg Gly Phe Pro Asp Ser Trp Val
        115                 120                 125

Val Leu Cys Thr Cys Ser Gly Met Ser Gly Leu Ile Thr Leu Ser Arg
    130                 135                 140

Asn Ala Ser Tyr Tyr Leu Arg Pro Trp Pro Pro Arg Gly Ser Lys Asp
145                 150                 155                 160

Phe Ser Thr His Glu Ile Phe Arg Met Glu Gln Leu Leu Thr Trp Lys
                165                 170                 175

Gly Thr Cys Gly His Arg Asp Pro Gly Asn Lys Ala Gly Met Thr Ser
            180                 185                 190

Leu Pro Gly Gly Pro Gln Ser Arg Gly Arg Arg Glu Ala Arg Arg Thr
        195                 200                 205

Arg Lys Tyr Leu Glu Leu Tyr Ile Val Ala Asp His Thr Leu Phe Leu
    210                 215                 220

Thr Arg His Arg Asn Leu Asn His Thr Lys Gln Arg Leu Leu Glu Val
225                 230                 235                 240

Ala Asn Tyr Val Asp Gln Leu Leu Arg Thr Leu Asp Ile Gln Val Ala
                245                 250                 255

Leu Thr Gly Leu Glu Val Trp Thr Glu Arg Asp Arg Ser Arg Val Thr
            260                 265                 270

Gln Asp Ala Asn Ala Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg Gly
        275                 280                 285

Leu Trp Ala Gln Arg Pro His Asp Ser Ala Gln Leu Leu Thr Gly Arg
    290                 295                 300

Ala Phe Gln Gly Ala Thr Val Gly Leu Ala Pro Val Glu Gly Met Cys
305                 310                 315                 320

Arg Ala Glu Ser Ser Gly Gly Val Ser Thr Asp His Ser Glu Leu Pro
```

```
                325                 330                 335

Ile Gly Ala Ala Ala Thr Met Ala His Glu Ile Gly His Ser Leu Gly
            340                 345                 350

Leu Ser His Asp Pro Asp Gly Cys Cys Val Glu Ala Ala Ala Glu Ser
        355                 360                 365

Gly Gly Cys Val Met Ala Ala Ala Thr Gly His Pro Phe Pro Arg Val
    370                 375                 380

Phe Ser Ala Cys Ser Arg Arg Gln Leu Arg Ala Phe Phe Arg Lys Gly
385                 390                 395                 400

Gly Gly Ala Cys Leu Ser Asn Ala Pro Asp Pro Gly Leu Pro Val Pro
                405                 410                 415

Pro Ala Leu Cys Gly Asn Gly Phe Val Glu Ala Gly Glu Glu Cys Asp
            420                 425                 430

Cys Gly Pro Gly Gln Glu Cys Arg Asp Leu Cys Cys Phe Ala His Asn
        435                 440                 445

Cys Ser Leu Arg Pro Gly Ala Gln Cys Ala His Gly Asp Cys Cys Val
    450                 455                 460

Arg Cys Leu Leu Lys Pro Ala Gly Ala Leu Cys Arg Gln Ala Met Gly
465                 470                 475                 480

Asp Cys Asp Leu Pro Glu Phe Cys Thr Gly Thr Ser Ser His Cys Pro
                485                 490                 495

Pro Asp Val Tyr Leu Leu Asp Gly Ser Pro Cys Ala Arg Gly Ser Gly
            500                 505                 510

Tyr Cys Trp Asp Gly Ala Cys Pro Thr Leu Glu Gln Gln Cys Gln Gln
        515                 520                 525

Leu Trp Gly Pro Gly Ser His Pro Ala Pro Glu Ala Cys Phe Gln Val
    530                 535                 540

Val Asn Ser Ala Gly Asp Ala His Gly Asn Cys Gly Gln Asp Ser Glu
545                 550                 555                 560

Gly His Phe Leu Pro Cys Ala Gly Arg Asp Ala Leu Cys Gly Lys Leu
                565                 570                 575

Gln Cys Gln Gly Gly Lys Pro Ser Leu Leu Ala Pro His Met Val Pro
            580                 585                 590

Val Asp Ser Thr Val His Leu Asp Gly Gln Glu Val Thr Cys Arg Gly
        595                 600                 605

Ala Leu Ala Leu Pro Ser Ala Gln Leu Asp Leu Leu Gly Leu Gly Leu
    610                 615                 620

Val Glu Pro Gly Thr Gln Cys Gly Pro Arg Met Val Cys Gln Ser Arg
625                 630                 635                 640

Arg Cys Arg Lys Asn Ala Phe Gln Glu Leu Gln Arg Cys Leu Thr Ala
                645                 650                 655

Cys His Ser His Gly Val Cys Asn Ser Asn His Asn Cys His Cys Ala
```

660 665 670

Pro Gly Trp Ala Pro Pro Phe Cys Asp Lys Pro Gly Phe Gly Gly Ser
675 680 685

Met Asp Ser Gly Pro Val Gln Ala Glu Asn His Asp Thr Phe Leu Leu
690 695 700

Ala Met Leu Leu Ser Val Leu Leu Pro Leu Leu Pro Gly Ala Gly Leu
705 710 715 720

Ala Trp Cys Cys Tyr Arg Leu Pro Gly Ala His Leu Gln Arg Cys Ser
725 730 735

Trp Gly Cys Arg Arg Asp Pro Ala Cys Ser Gly Pro Lys Asp Gly Pro
740 745 750

His Arg Asp His Pro Leu Gly Gly Val His Pro Met Glu Leu Gly Pro
755 760 765

Thr Ala Thr Gly Gln Pro Trp Pro Leu Asp Pro Glu Asn Ser His Glu
770 775 780

Pro Ser Ser His Pro Glu Lys Pro Leu Pro Ala Val Ser Pro Asp Pro
785 790 795 800

Gln Asp Gln Val Gln Met Pro Arg Ser Cys Leu Trp
805 810

<210> 80
<211> 728
<212> PRT
<213> Homo sapiens

<400> 80
Arg Leu Leu Ala Pro Gly Tyr Ile Glu Thr His Tyr Gly Pro Asp Gly
1 5 10 15

Gln Pro Val Val Leu Ala Pro Asn His Thr Asp His Cys His Tyr Gln
20 25 30

Gly Arg Val Arg Gly Phe Pro Asp Ser Trp Val Val Leu Cys Thr Cys
35 40 45

Ser Gly Met Ser Gly Leu Ile Thr Leu Ser Arg Asn Ala Ser Tyr Tyr
50 55 60

Leu Arg Pro Trp Pro Pro Arg Gly Ser Lys Asp Phe Ser Thr His Glu
65 70 75 80

Ile Phe Arg Met Glu Gln Leu Leu Thr Trp Lys Gly Thr Cys Gly His
85 90 95

Arg Asp Pro Gly Asn Lys Ala Gly Met Thr Ser Leu Pro Gly Gly Pro
100 105 110

Gln Ser Arg Gly Arg Arg Glu Ala Arg Arg Thr Arg Lys Tyr Leu Glu
115 120 125

Leu Tyr Ile Val Ala Asp His Thr Leu Phe Leu Thr Arg His Arg Asn
130 135 140

```
Leu Asn His Thr Lys Gln Arg Leu Leu Glu Val Ala Asn Tyr Val Asp
145                 150                 155                 160

Gln Leu Leu Arg Thr Leu Asp Ile Gln Val Ala Leu Thr Gly Leu Glu
                165                 170                 175

Val Trp Thr Glu Arg Asp Arg Ser Arg Val Thr Gln Asp Ala Asn Ala
            180                 185                 190

Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg Gly Leu Trp Ala Gln Arg
        195                 200                 205

Pro His Asp Ser Ala Gln Leu Leu Thr Gly Arg Ala Phe Gln Gly Ala
    210                 215                 220

Thr Val Gly Leu Ala Pro Val Glu Gly Met Cys Arg Ala Glu Ser Ser
225                 230                 235                 240

Gly Gly Val Ser Thr Asp His Ser Glu Leu Pro Ile Gly Ala Ala Ala
                245                 250                 255

Thr Met Ala His Glu Ile Gly His Ser Leu Gly Leu Ser His Asp Pro
            260                 265                 270

Asp Gly Cys Cys Val Glu Ala Ala Ala Glu Ser Gly Gly Cys Val Met
        275                 280                 285

Ala Ala Ala Thr Gly His Pro Phe Pro Arg Val Phe Ser Ala Cys Ser
    290                 295                 300

Arg Arg Gln Leu Arg Ala Phe Phe Arg Lys Gly Gly Gly Ala Cys Leu
305                 310                 315                 320

Ser Asn Ala Pro Asp Pro Gly Leu Pro Val Pro Pro Ala Leu Cys Gly
                325                 330                 335

Asn Gly Phe Val Glu Ala Gly Glu Glu Cys Asp Cys Gly Pro Gly Gln
            340                 345                 350

Glu Cys Arg Asp Leu Cys Cys Phe Ala His Asn Cys Ser Leu Arg Pro
        355                 360                 365

Gly Ala Gln Cys Ala His Gly Asp Cys Cys Val Arg Cys Leu Leu Lys
    370                 375                 380

Pro Ala Gly Ala Leu Cys Arg Gln Ala Met Gly Asp Cys Asp Leu Pro
385                 390                 395                 400

Glu Phe Cys Thr Gly Thr Ser Ser His Cys Pro Pro Asp Val Tyr Leu
                405                 410                 415

Leu Asp Gly Ser Pro Cys Ala Arg Gly Ser Gly Tyr Cys Trp Asp Gly
            420                 425                 430

Ala Cys Pro Thr Leu Glu Gln Gln Cys Gln Gln Leu Trp Gly Pro Gly
        435                 440                 445

Ser His Pro Ala Pro Glu Ala Cys Phe Gln Val Val Asn Ser Ala Gly
    450                 455                 460

Asp Ala His Gly Asn Cys Gly Gln Asp Ser Glu Gly His Phe Leu Pro
465                 470                 475                 480
```

```
Cys Ala Gly Arg Asp Ala Leu Cys Gly Lys Leu Gln Cys Gln Gly Gly
                485                 490                 495

Lys Pro Ser Leu Leu Ala Pro His Met Val Pro Val Asp Ser Thr Val
            500                 505                 510

His Leu Asp Gly Gln Glu Val Thr Cys Arg Gly Ala Leu Ala Leu Pro
        515                 520                 525

Ser Ala Gln Leu Asp Leu Leu Gly Leu Gly Leu Val Glu Pro Gly Thr
    530                 535                 540

Gln Cys Gly Pro Arg Met Val Cys Gln Ser Arg Arg Cys Arg Lys Asn
545                 550                 555                 560

Ala Phe Gln Glu Leu Gln Arg Cys Leu Thr Ala Cys His Ser His Gly
                565                 570                 575

Val Cys Asn Ser Asn His Asn Cys His Cys Ala Pro Gly Trp Ala Pro
            580                 585                 590

Pro Phe Cys Asp Lys Pro Gly Phe Gly Gly Ser Met Asp Ser Gly Pro
        595                 600                 605

Val Gln Ala Glu Asn His Asp Thr Phe Leu Leu Ala Met Leu Leu Ser
    610                 615                 620

Val Leu Leu Pro Leu Leu Pro Gly Ala Gly Leu Ala Trp Cys Cys Tyr
625                 630                 635                 640

Arg Leu Pro Gly Ala His Leu Gln Arg Cys Ser Trp Gly Cys Arg Arg
                645                 650                 655

Asp Pro Ala Cys Ser Gly Pro Lys Asp Gly Pro His Arg Asp His Pro
            660                 665                 670

Leu Gly Gly Val His Pro Met Glu Leu Gly Pro Thr Ala Thr Gly Gln
        675                 680                 685

Pro Trp Pro Leu Asp Pro Glu Asn Ser His Glu Pro Ser Ser His Pro
    690                 695                 700

Glu Lys Pro Leu Pro Ala Val Ser Pro Asp Pro Gln Ala Asp Gln Val
705                 710                 715                 720

Gln Met Pro Arg Ser Cys Leu Trp
                725
```

<210> 81
<211> 802
<212> PRT
<213> Homo sapiens

<400> 81

```
Met Gly Trp Arg Pro Arg Arg Ala Arg Gly Thr Pro Leu Leu Leu Leu
  1               5                  10                  15

Leu Leu Leu Leu Leu Leu Trp Pro Val Pro Gly Ala Gly Val Leu Gln
             20                  25                  30

Gly His Ile Pro Gly Gln Pro Val Thr Pro His Trp Val Leu Asp Gly
         35                  40                  45
```

```
Gln Pro Trp Arg Thr Val Ser Leu Glu Glu Pro Val Ser Lys Pro Asp
     50                  55                  60

Met Gly Leu Val Ala Leu Glu Ala Glu Gly Gln Glu Leu Leu Leu Glu
 65                  70                  75                  80

Leu Glu Lys Asn His Arg Leu Leu Ala Pro Gly Tyr Ile Glu Thr His
                85                  90                  95

Tyr Gly Pro Asp Gly Gln Pro Val Val Leu Ala Pro Asn His Thr Asp
            100                 105                 110

His Cys His Tyr Gln Gly Arg Val Arg Gly Phe Pro Asp Ser Trp Val
        115                 120                 125

Val Leu Cys Thr Cys Ser Gly Met Ser Gly Leu Ile Thr Leu Ser Arg
    130                 135                 140

Asn Ala Ser Tyr Tyr Leu Arg Pro Trp Pro Pro Arg Gly Ser Lys Asp
145                 150                 155                 160

Phe Ser Thr His Glu Ile Phe Arg Met Glu Gln Leu Leu Thr Trp Lys
                165                 170                 175

Gly Thr Cys Gly His Arg Asp Pro Gly Asn Lys Ala Gly Met Thr Ser
            180                 185                 190

Leu Pro Gly Gly Pro Gln Ser Arg Gly Arg Arg Glu Ala Arg Arg Thr
        195                 200                 205

Arg Lys Tyr Leu Glu Leu Tyr Ile Val Ala Asp His Thr Leu Phe Leu
    210                 215                 220

Thr Arg His Arg Asn Leu Asn His Thr Lys Gln Arg Leu Leu Glu Val
225                 230                 235                 240

Ala Asn Tyr Val Asp Gln Leu Leu Arg Thr Leu Asp Ile Gln Val Ala
                245                 250                 255

Leu Thr Gly Leu Glu Val Trp Thr Glu Arg Asp Arg Ser Arg Val Thr
            260                 265                 270

Gln Asp Ala Asn Ala Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg Gly
        275                 280                 285

Leu Trp Ala Gln Arg Pro His Asp Ser Ala Gln Leu Leu Thr Gly Arg
    290                 295                 300

Ala Phe Gln Gly Ala Thr Val Gly Leu Ala Pro Val Glu Gly Met Cys
305                 310                 315                 320

Arg Ala Glu Ser Ser Gly Gly Val Ser Thr Asp His Ser Glu Leu Pro
                325                 330                 335

Ile Gly Ala Ala Ala Thr Met Ala His Glu Ile Gly His Ser Leu Gly
            340                 345                 350

Leu Ser His Asp Pro Asp Gly Cys Cys Val Glu Ala Ala Ala Glu Ser
        355                 360                 365

Gly Gly Cys Val Met Ala Ala Ala Thr Gly His Pro Phe Pro Arg Val
    370                 375                 380
```

```
Phe Ser Ala Cys Ser Arg Arg Gln Leu Arg Ala Phe Phe Arg Lys Gly
385                 390                 395                 400

Gly Gly Ala Cys Leu Ser Asn Ala Pro Asp Pro Gly Leu Pro Val Pro
                405                 410                 415

Pro Ala Leu Cys Gly Asn Gly Phe Val Glu Ala Gly Glu Glu Cys Asp
            420                 425                 430

Cys Gly Pro Gly Gln Glu Cys Arg Asp Leu Cys Cys Phe Ala His Asn
        435                 440                 445

Cys Ser Leu Arg Pro Gly Ala Gln Cys Ala His Gly Asp Cys Cys Val
    450                 455                 460

Arg Cys Leu Leu Lys Pro Ala Gly Ala Leu Cys Arg Gln Ala Met Gly
465                 470                 475                 480

Asp Cys Asp Leu Pro Glu Phe Cys Thr Gly Thr Ser Ser His Cys Pro
                485                 490                 495

Pro Asp Val Tyr Leu Leu Asp Gly Ser Pro Cys Ala Arg Gly Ser Gly
            500                 505                 510

Tyr Cys Trp Asp Gly Ala Cys Pro Thr Leu Glu Gln Gln Cys Gln Gln
        515                 520                 525

Leu Trp Gly Pro Gly Ser His Pro Ala Pro Glu Ala Cys Phe Gln Val
    530                 535                 540

Val Asn Ser Ala Gly Asp Ala His Gly Asn Cys Gly Gln Asp Ser Glu
545                 550                 555                 560

Gly His Phe Leu Pro Cys Ala Gly Arg Asp Ala Leu Cys Gly Lys Leu
                565                 570                 575

Gln Cys Gln Gly Gly Lys Pro Ser Leu Leu Ala Pro His Met Val Pro
            580                 585                 590

Val Asp Ser Thr Val His Leu Asp Gly Gln Glu Val Thr Cys Arg Gly
        595                 600                 605

Ala Leu Ala Leu Pro Ser Ala Gln Leu Asp Leu Leu Gly Leu Gly Leu
    610                 615                 620

Val Glu Pro Gly Thr Gln Cys Gly Pro Arg Met Val Cys Gln Ser Arg
625                 630                 635                 640

Arg Cys Arg Lys Asn Ala Phe Gln Glu Leu Gln Arg Cys Leu Thr Ala
                645                 650                 655

Cys His Ser His Gly Ala Gly Leu His Pro Ser Val Thr Ser Gln Ala
            660                 665                 670

Leu Val Ala Ala Trp Thr Val Ala Leu Cys Arg Leu Lys Thr Met Thr
        675                 680                 685

Pro Ser Cys Trp Pro Cys Ser Ser Ala Ser Cys Cys Leu Cys Ser Gln
    690                 695                 700

Gly Pro Ala Trp Pro Gly Val Ala Thr Asp Ser Gln Glu Pro Ile Cys
705                 710                 715                 720
```

```
Ser Asp Ala Ala Gly Ala Ala Glu Gly Thr Leu Arg Ala Val Ala Pro
                725                 730                 735

Lys Met Ala His Thr Gly Thr Thr Pro Trp Ala Ala Phe Thr Pro Trp
            740                 745                 750

Ser Trp Ala Pro Gln Pro Leu Asp Ser Pro Gly Pro Trp Thr Leu Arg
        755                 760                 765

Thr Leu Met Ser Pro Ala Ala Thr Leu Arg Ser Leu Cys Gln Gln Ser
    770                 775                 780

Arg Leu Thr Pro Lys Ile Lys Ser Arg Cys Gln Asp Pro Ala Ser Gly
785                 790                 795                 800

Glu Arg
```

<210> 82
<211> 685
<212> PRT
<213> Mus musculus

<400> 82

```
Asp His Cys Gln Tyr His Gly Arg Val Arg Gly Phe Arg Glu Ser Trp
  1               5                  10                  15

Val Val Leu Ser Thr Cys Ser Gly Met Ser Gly Leu Ile Val Leu Ser
             20                  25                  30

Ser Lys Val Ser Tyr Tyr Leu Gln Pro Arg Thr Pro Gly Asp Thr Lys
         35                  40                  45

Asp Phe Pro Thr His Glu Ile Phe Arg Met Glu Gln Leu Phe Thr Trp
     50                  55                  60

Arg Gly Val Gln Arg Asp Lys Asn Ser Gln Tyr Lys Ala Gly Met Ala
 65                  70                  75                  80

Ser Leu Pro His Val Pro Gln Ser Arg Val Arg Arg Glu Ala Arg Arg
                 85                  90                  95

Ser Pro Arg Tyr Leu Glu Leu Tyr Ile Val Ala Asp His Thr Leu Phe
            100                 105                 110

Leu Leu Gln His Gln Asn Leu Asn His Thr Arg Gln Arg Leu Leu Glu
        115                 120                 125

Val Ala Asn Cys Val Asp Gln Ile Leu Arg Thr Leu Asp Ile Gln Leu
    130                 135                 140

Val Leu Thr Gly Leu Glu Val Trp Thr Glu Gln Asp Leu Ser Arg Ile
145                 150                 155                 160

Thr Gln Asp Ala Asn Glu Thr Leu Trp Ala Phe Leu Gln Trp Arg Arg
                165                 170                 175

Gly Val Trp Ala Arg Arg Pro His Asp Ser Thr Gln Leu Leu Thr Gly
            180                 185                 190

Arg Thr Phe Gln Gly Thr Thr Val Gly Leu Ala Pro Val Glu Asp Met
```

```
        195                 200                 205

Pro Arg Gly Glu Leu Ser Phe Gly Gly Val Ser Thr Asp His Ser Glu
    210                 215                 220

Leu Pro Ile Gly Thr Ala Ala Thr Met Ala His Glu Ile Gly His Ser
225                 230                 235                 240

Leu Gly Leu His His Asp Pro Glu Gly Cys Cys Val Gln Ala Asp Ala
                245                 250                 255

Glu Gln Gly Gly Cys Val Met Glu Ala Ala Thr Gly His Pro Phe Pro
            260                 265                 270

Arg Val Phe Ser Ala Cys Ser Arg Arg Gln Leu Arg Thr Phe Phe Arg
        275                 280                 285

Lys Gly Gly Gly Pro Cys Leu Ser Asn Thr Ser Ala Pro Gly Leu Leu
    290                 295                 300

Val Leu Pro Ser Arg Cys Gly Asn Gly Phe Leu Glu Ala Gly Glu Glu
305                 310                 315                 320

Cys Asp Cys Gly Ser Gly Gln Lys Cys Pro Asp Pro Cys Cys Phe Ala
                325                 330                 335

His Asn Cys Ser Leu Arg Ala Gly Ala Gln Cys Ala His Gly Asp Cys
            340                 345                 350

Cys Ala Arg Cys Leu Leu Lys Ser Ala Gly Thr Pro Cys Arg Pro Ala
        355                 360                 365

Ala Thr Asp Cys Asp Leu Pro Glu Phe Cys Thr Gly Thr Ser Pro Tyr
    370                 375                 380

Cys Pro Ala Asp Val Tyr Leu Leu Asp Gly Ser Pro Cys Ala Glu Gly
385                 390                 395                 400

Arg Gly Tyr Cys Leu Asp Gly Trp Cys Pro Thr Leu Glu Gln Gln Cys
                405                 410                 415

Gln Gln Leu Trp Gly Pro Gly Ser Lys Pro Ala Pro Glu Pro Cys Phe
            420                 425                 430

Gln Gln Met Asn Ser Met Gly Asn Ser Gln Gly Asn Cys Gly Gln Asp
        435                 440                 445

His Lys Gly Ser Phe Leu Pro Cys Ala Gln Arg Asp Ala Leu Cys Gly
    450                 455                 460

Lys Leu Leu Cys Gln Gly Gly Glu Pro Asn Pro Leu Val Pro His Ile
465                 470                 475                 480

Val Thr Met Asp Ser Thr Ile Leu Leu Glu Gly Arg Glu Val Val Cys
                485                 490                 495

Arg Gly Ala Phe Val Leu Pro Asp Ser His Leu Asp Gln Leu Asp Leu
            500                 505                 510

Gly Leu Val Glu Pro Gly Thr Gly Cys Gly Pro Arg Met Val Cys Gln
        515                 520                 525

Asp Arg His Cys Gln Asn Ala Thr Ser Gln Glu Leu Glu Arg Cys Leu
```

```
    530                 535                 540

Thr Ala Cys His Asn Gly Gly Val Cys Asn Ser Asn Arg Asn Cys His
545                 550                 555                 560

Cys Ala Ala Gly Trp Ala Pro Pro Phe Cys Asp Lys Pro Gly Leu Gly
                565                 570                 575

Gly Ser Val Asp Ser Gly Pro Ala Gln Ser Ala Asn Arg Asp Ala Phe
            580                 585                 590

Pro Leu Ala Met Leu Leu Ser Phe Leu Leu Pro Leu Leu Pro Gly Ala
        595                 600                 605

Gly Leu Ala Trp Cys Tyr Gln Leu Pro Thr Phe Cys His Arg Arg Gly
    610                 615                 620

Leu Cys Cys Arg Arg Asp Pro Leu Trp Asn Arg Asp Ile Pro Leu Gly
625                 630                 635                 640

Ser Val His Pro Val Glu Phe Gly Ser Ile Ile Thr Gly Glu Pro Ser
                645                 650                 655

Pro Pro Pro Pro Trp Thr Ser Cys Gln Gln Arg Ser His Pro Pro Ser
            660                 665                 670

Leu Asp Leu Leu Ser Asp Pro Ala Asn Ser Glu Leu Thr
        675                 680                 685


<210> 83
<211> 914
<212> PRT
<213> Xenopus laevis

<400> 83
Met Gly Thr Glu Gly Arg Leu Ser Thr Trp Leu Gly Leu Gly Ala Val
  1               5                  10                  15

Ile Val Gly Leu Leu Leu Pro Pro Val Leu Thr Leu Gly Ala His Gln
             20                  25                  30

Gly Glu Leu Val Thr Ala Phe Trp Leu Gln Asn Gly Arg Ala Lys Arg
         35                  40                  45

Ser Val Asp Leu Leu Asp Lys Gly Thr Pro Asp Gly Gly Glu Ile Leu
     50                  55                  60

Val Ser Ser Glu Gly Arg Lys Phe Ile Leu Lys Val Glu Arg Asn His
 65                  70                  75                  80

Leu Leu Phe Ala Pro Gly Tyr Thr Glu Thr His Tyr Thr Asp Gly Gln
                 85                  90                  95

Met Val Thr Leu Ser Pro Asn His Thr Glu His Cys Tyr Tyr His Gly
            100                 105                 110

Gln Val Glu Asn Tyr Asp Glu Ser Ser Val Ala Leu Thr Thr Cys Ser
        115                 120                 125

Gly Ile Ser Gly Leu Ile Trp Leu Ser Thr Asn Asn Ser Tyr Tyr Leu
    130                 135                 140
```

```
Lys Pro Leu Glu Val Pro Gly Lys Glu Thr His Thr Leu Val Arg Thr
145                 150                 155                 160

Glu His Leu Leu Ile Lys Glu Gly Ser Cys Gly His Asp Gly His Ser
                165                 170                 175

Gly Ser Thr Ala Ser Tyr Leu Gln Glu Phe Thr Ala Pro Ser Ser His
            180                 185                 190

His His Arg Val Arg Arg Asn Val Trp Arg Ser Gln Lys Tyr Met Glu
        195                 200                 205

Leu Phe Ile Val Ala Asp Tyr Ser Met Phe Met Lys Gln Asn Arg Asn
    210                 215                 220

Leu Gly Ser Thr Lys Gln Arg Val Leu Glu Ile Ala Asn Tyr Val Asp
225                 230                 235                 240

Lys Phe Tyr Met Ser Met Asn Ile Lys Val Ala Leu Ile Gly Leu Glu
                245                 250                 255

Val Trp Thr Glu Arg Asp Gln Cys Glu Val Asn Asp Asp Ala Asn Asp
            260                 265                 270

Ser Leu Lys Ser Phe Leu Gln Trp Lys Gln Lys Leu Arg Ser Arg Lys
        275                 280                 285

Lys His Asp Asn Ala Gln Leu Ile Thr Gly Val Thr Phe Lys Gly Thr
    290                 295                 300

Thr Ile Gly Met Ala Pro Leu Glu Gly Met Cys Thr Ala Glu Asn Ser
305                 310                 315                 320

Gly Gly Val Ser Met Asp His Ser Glu Asn Ala Ile Gly Ala Ala Ala
                325                 330                 335

Thr Met Ala His Glu Ile Gly His Asn Phe Gly Met Ser His Asp Asp
            340                 345                 350

Gly Cys Cys Val Glu Ala Thr Pro Glu Gln Gly Gly Cys Ile Met Ala
        355                 360                 365

Ala Ala Thr Gly His Pro Phe Pro Arg Lys Phe Ser Ser Cys Ser Gln
    370                 375                 380

Lys Gln Leu Met Ser Tyr Phe Gln Lys Gly Gly Gly Met Cys Leu Phe
385                 390                 395                 400

Asn Met Pro Asn Thr Lys Asp Leu Val Met Gly Lys Lys Cys Gly Asn
                405                 410                 415

Gly Phe Leu Glu Glu Gly Glu Gln Cys Asp Cys Gly Glu Pro Glu Glu
            420                 425                 430

Cys Thr Asn Ser Cys Cys Asn Ala Asn Asn Cys Thr Leu Lys Ala Gly
        435                 440                 445

Ala Gln Cys Ala His Gly Glu Cys Cys Gln Asp Cys Lys Leu Lys Ser
    450                 455                 460

Ala Gly Thr Gln Cys Arg Glu Met Ala Gly Ser Cys Asp Leu Pro Glu
465                 470                 475                 480
```

```
Phe Cys Thr Gly Asp Ala Pro Ser Cys Pro Ser Asn Val Tyr Lys Leu
                485                 490                 495

Asp Gly Ser Leu Cys Ala Asp Gly Asn Ala Tyr Cys Tyr Asn Gly Met
            500                 505                 510

Cys Leu Thr His Gln Gln Gln Cys Ile His Leu Trp Gly Ser Gly Ala
        515                 520                 525

Val Val Ala Pro Asn Phe Cys Phe Gln Asp Val Asn Lys Ala Gly Asp
    530                 535                 540

Gln Tyr Gly Asn Cys Gly Lys Asn Gly Arg Gly Gln Phe Val Lys Cys
545                 550                 555                 560

Thr Ser Arg Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Thr Ser Ser
                565                 570                 575

Glu Lys Pro Arg Asp Pro Ser Met Val Lys Val Asp Asn Thr Ile Ile
            580                 585                 590

Ile Asn Gly Tyr Lys Met Lys Cys Gln Gly Val His Ala Tyr Ser Met
        595                 600                 605

Gln Glu Glu Glu Gly Asp Pro Gly Leu Val Met Thr Gly Thr Lys Cys
    610                 615                 620

Gly Asp Gly Met Val Cys Lys Asp Arg Arg Cys Gln Asn Ala Ser Phe
625                 630                 635                 640

Phe Glu Leu Asp Gln Cys Val Ser Lys Cys Asn Gly His Gly Val Cys
                645                 650                 655

Asn Ser Asn Arg Asn Cys His Cys Asp Ser Gly Trp Ala Pro Pro Tyr
            660                 665                 670

Cys Asp Lys Pro Gly Pro Gly Gly Ser Gln Asp Ser Gly Pro Ala Pro
        675                 680                 685

Ser Asp Leu Pro Val Gly Val Thr Ile Phe Leu Val Ile Leu Phe Leu
    690                 695                 700

Val Leu Leu Leu Ala Leu Ala Phe Ala Met Val Tyr Trp Tyr Arg Lys
705                 710                 715                 720

Pro Gly Ser Leu Leu Asn Arg Trp Leu Met Lys Ser Lys Ala Lys Cys
                725                 730                 735

Ser Leu Cys Lys Ala Thr Gln Pro Lys Ala Asn Arg Ala Tyr Ser Ser
            740                 745                 750

Arg Ile Phe Thr Leu Arg Asn Ile Ser Tyr Pro Val Lys Ser Thr Ser
        755                 760                 765

Lys Glu Thr Arg Ser Arg Asp Ile Phe Gln Gly Lys Thr Thr Ala Ala
    770                 775                 780

Gln Asn Ser Ser Gln Pro Val Asn Val Val Arg Pro Leu Arg Pro Ala
785                 790                 795                 800

Pro Ser Pro Val Ile Gln His Gly Val Gln Val Lys Pro Leu Arg Pro
                805                 810                 815
```

```
Pro Pro Pro Pro Met Lys Pro Ser Pro Ile Leu Pro Ala Lys Glu Gln
            820                 825                 830

Thr Val His Val Lys Leu Leu Pro Pro Lys Lys Pro Leu Pro Ser Cys
        835                 840                 845

Pro Ile Arg Thr Gln Gln Leu Asn Pro Pro Ser Lys Pro Leu Pro Val
    850                 855                 860

Thr Pro Ala His Lys Glu Pro Leu Leu Val Leu Thr Pro Ala Thr His
865                 870                 875                 880

Lys Pro Pro Ile Thr Asn Ser Ala Thr Gln Leu Lys Gly Pro His Arg
                885                 890                 895

Pro Ile Gln Gly Gly Lys Val Gln Ala Ala Ala Ala Ala Phe Leu Gln
            900                 905                 910

Arg Lys
```

<210> 84
<211> 203
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Reprolysin (M12B) family zinc metalloprotease domain sequence

<400> 84

```
Lys Tyr Ile Glu Leu Val Ile Val Val Asp His Gly Met Tyr Thr Lys
  1               5                  10                  15

Tyr Gly Ser Asp Leu Asn Lys Ile Arg Gln Arg Val His Gln Ile Val
             20                  25                  30

Asn Leu Val Asn Glu Ile Tyr Arg Pro Gln Leu Asn Ile Arg Val Val
         35                  40                  45

Leu Val Gly Leu Glu Ile Trp Ser Asp Gly Asp Lys Ile Asn Val Gln
     50                  55                  60

Ser Asp Ala Asn Asp Thr Leu His Ser Phe Gly Glu Trp Arg Glu Thr
 65                  70                  75                  80

Asp Leu Leu Lys Arg Lys Ser His Asp Asn Ala Gln Leu Leu Thr Gly
                 85                  90                  95

Ile Asp Phe Asp Gly Asn Thr Ile Gly Ala Ala Tyr Val Gly Gly Met
            100                 105                 110

Cys Ser Pro Lys Arg Ser Val Gly Val Val Gln Asp His Ser Pro Ile
        115                 120                 125

Val Leu Leu Val Ala Val Thr Met Ala His Glu Leu Gly His Asn Leu
    130                 135                 140

Gly Met Thr His Asp Asp Lys Asn Lys Asp Gly Cys Thr Cys Glu Gly
145                 150                 155                 160

Gly Gly Ser Cys Ile Met Asn Pro Val Ala Ser Ser Ser Pro Ser Lys
```

165 170 175

Lys Lys Phe Ser Asn Cys Ser Lys Asp Asp Tyr Gln Lys Phe Leu Thr
180 185 190

Lys Gln Lys Pro Gln Cys Leu Leu Asn Lys Pro
195 200

<210> 85
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Pep_M12B_Propep (Reprolysin family propeptide)
domain sequence

<400> 85
His Leu Glu Lys Asn Arg Ser Leu Leu Ala Pro Asp Phe Thr Val Thr
1 5 10 15

Thr Tyr Asp Glu Asp Gly Thr Leu Val Thr Glu Glu Pro Leu Ile Gln
20 25 30

Asp Asp His Cys Tyr Tyr Gln Gly Tyr Val Glu Gly Tyr Pro Asn Ser
35 40 45

Ala Val Ser Leu Ser Thr Cys Ser Gly Gly Leu Arg Gly Ile Leu Gln
50 55 60

Leu Glu Asn Leu Ser Tyr Gly Ile Glu Pro Leu Glu Ser Ser Asp Gly
65 70 75 80

Phe Glu His Ile Ile Tyr Gln Ile Glu Asn Asp Lys Thr Glu Pro Ser
85 90 95

Pro Cys Gly Glu Cys Gly Ser Leu Ser Thr Ser Thr Asp Ser Ser Tyr
100 105 110

Gly Ile Arg Ser Ala Ser Pro
115

<210> 86
<211> 422
<212> PRT
<213> Homo sapiens

<400> 86
Met Phe Ser Asn Ser Asp Glu Ala Val Ile Asn Lys Lys Leu Pro Lys
1 5 10 15

Glu Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Val Val Thr Leu Cys
20 25 30

Arg Cys Ala Gln Val Ser Arg Ala Trp Asn Val Leu Ala Leu Asp Gly
35 40 45

Ser Asn Trp Gln Arg Ile Asp Leu Phe Asp Phe Gln Arg Asp Ile Glu
50 55 60

```
Gly Arg Val Val Glu Asn Ile Ser Lys Arg Cys Gly Gly Phe Leu Arg
 65                  70                  75                  80

Lys Leu Ser Leu Arg Gly Cys Leu Gly Val Gly Asp Asn Ala Leu Arg
                 85                  90                  95

Thr Phe Ala Gln Asn Cys Arg Asn Ile Glu Val Leu Asn Leu Asn Gly
            100                 105                 110

Cys Thr Lys Thr Thr Asp Ala Thr Cys Thr Ser Leu Ser Lys Phe Cys
        115                 120                 125

Ser Lys Leu Arg His Leu Asp Leu Ala Ser Cys Thr Ser Ile Thr Asn
    130                 135                 140

Met Ser Leu Lys Ala Leu Ser Glu Gly Cys Pro Leu Leu Glu Gln Leu
145                 150                 155                 160

Asn Ile Ser Trp Cys Asp Gln Val Thr Lys Asp Gly Ile Gln Ala Leu
                165                 170                 175

Val Arg Gly Cys Gly Gly Leu Lys Ala Leu Phe Leu Lys Gly Cys Thr
            180                 185                 190

Gln Leu Glu Asp Glu Ala Leu Lys Tyr Ile Gly Ala His Cys Pro Glu
        195                 200                 205

Leu Val Thr Leu Asn Leu Gln Thr Cys Leu Gln Ile Thr Asp Glu Gly
    210                 215                 220

Leu Ile Thr Ile Cys Arg Gly Cys His Lys Leu Gln Ser Leu Cys Ala
225                 230                 235                 240

Ser Gly Cys Ser Asn Ile Thr Asp Ala Ile Leu Asn Ala Leu Gly Gln
                245                 250                 255

Asn Cys Pro Arg Leu Arg Ile Leu Glu Val Ala Arg Cys Ser Gln Leu
            260                 265                 270

Thr Asp Val Gly Phe Thr Thr Leu Ala Arg Asn Cys His Glu Leu Glu
        275                 280                 285

Lys Met Asp Leu Glu Glu Cys Val Gln Ile Thr Asp Ser Thr Leu Ile
    290                 295                 300

Gln Leu Ser Ile His Cys Pro Arg Leu Gln Val Leu Ser Leu Ser His
305                 310                 315                 320

Cys Glu Leu Ile Thr Asp Asp Gly Ile Arg His Leu Gly Asn Gly Ala
                325                 330                 335

Cys Ala His Asp Gln Leu Glu Val Ile Glu Leu Asp Asn Cys Pro Leu
            340                 345                 350

Ile Thr Asp Ala Ser Leu Glu His Leu Lys Ser Cys His Ser Leu Glu
        355                 360                 365

Arg Ile Glu Leu Tyr Asp Cys Gln Gln Ile Thr Arg Ala Gly Ile Lys
    370                 375                 380

Arg Leu Arg Thr His Leu Pro Asn Ile Lys Val His Ala Tyr Phe Ala
385                 390                 395                 400
```

```
Pro Val Thr Pro Pro Pro Ser Val Gly Gly Ser Arg Gln Arg Phe Cys
                405                 410                 415

Arg Cys Cys Ile Ile Leu
            420
```

<210> 87
<211> 422
<212> PRT
<213> Mus musculus

<400> 87

```
Met Phe Ser Asn Ser Asp Glu Ala Val Ile Asn Lys Lys Leu Pro Lys
  1               5                  10                  15

Glu Leu Leu Leu Arg Ile Phe Ser Phe Pro Asp Val Val Thr Leu Cys
             20                  25                  30

Arg Cys Ala Gln Val Ser Arg Ala Trp Asn Val Leu Ala Leu Asp Gly
         35                  40                  45

Ser Asn Trp Gln Arg Ile Asp Leu Phe Asp Phe Gln Arg Asp Ile Glu
     50                  55                  60

Gly Arg Val Val Glu Asn Ile Ser Lys Arg Cys Gly Gly Phe Leu Arg
 65                  70                  75                  80

Lys Leu Ser Leu Arg Gly Cys Leu Gly Val Gly Asp Asn Ala Leu Arg
                 85                  90                  95

Thr Phe Ala Gln Asn Cys Arg Asn Ile Glu Val Leu Ser Leu Asn Gly
            100                 105                 110

Cys Thr Lys Thr Thr Asp Ala Thr Cys Thr Ser Leu Ser Lys Phe Cys
        115                 120                 125

Ser Lys Leu Arg His Leu Asp Leu Ala Ser Cys Thr Ser Ile Thr Asn
    130                 135                 140

Met Ser Leu Lys Ala Leu Ser Glu Gly Cys Pro Leu Leu Glu Gln Leu
145                 150                 155                 160

Asn Ile Ser Trp Cys Asp Gln Val Thr Lys Asp Gly Ile Gln Ala Leu
                165                 170                 175

Val Arg Gly Cys Gly Gly Leu Lys Ala Leu Phe Leu Lys Gly Cys Thr
            180                 185                 190

Gln Leu Glu Asp Glu Ala Leu Lys Tyr Ile Gly Ala His Cys Pro Glu
        195                 200                 205

Leu Val Thr Leu Asn Leu Gln Thr Cys Leu Gln Ile Thr Asp Glu Gly
    210                 215                 220

Leu Ile Thr Ile Cys Arg Gly Cys His Lys Leu Gln Ser Leu Cys Ala
225                 230                 235                 240

Ser Gly Cys Ser Asn Ile Thr Asp Ala Ile Leu Asn Ala Leu Gly Gln
                245                 250                 255

Asn Cys Pro Arg Leu Arg Ile Leu Glu Val Ala Arg Cys Ser Gln Leu
            260                 265                 270
```

```
Thr Asp Val Gly Phe Thr Thr Leu Ala Arg Asn Cys His Glu Leu Glu
        275                 280                 285

Lys Met Asp Leu Glu Glu Cys Val Gln Ile Thr Asp Ser Thr Leu Ile
    290                 295                 300

Gln Leu Ser Ile His Cys Pro Arg Leu Gln Val Leu Ser Leu Ser His
305                 310                 315                 320

Cys Glu Leu Ile Thr Asp Asp Gly Ile Arg His Leu Gly Asn Gly Ala
                325                 330                 335

Cys Ala His Asp Gln Leu Glu Val Ile Glu Leu Asp Asn Cys Pro Leu
            340                 345                 350

Ile Thr Asp Ala Ser Leu Glu His Leu Lys Ser Cys Pro Ser Phe Glu
        355                 360                 365

Arg Ile Glu Leu Tyr Asp Cys Gln Gln Ile Thr Arg Ala Gly Ile Lys
    370                 375                 380

Arg Leu Arg Thr His Leu Pro Asn Ile Lys Val His Ala Tyr Phe Ala
385                 390                 395                 400

Pro Val Thr Pro Pro Pro Ser Val Gly Gly Ser Arg Gln Arg Phe Cys
                405                 410                 415

Arg Cys Cys Ile Ile Leu
            420


<210> 88
<211> 423
<212> PRT
<213> Homo sapiens

<400> 88
Met Val Phe Ser Asn Asn Asp Glu Gly Leu Ile Asn Lys Lys Leu Pro
  1               5                  10                  15

Lys Glu Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Ile Val Thr Leu
             20                  25                  30

Cys Arg Cys Ala Gln Ile Ser Lys Ala Trp Asn Ile Leu Ala Leu Asp
         35                  40                  45

Gly Ser Asn Trp Gln Arg Ile Asp Leu Phe Asn Phe Gln Thr Asp Val
     50                  55                  60

Glu Gly Arg Val Val Glu Asn Ile Ser Lys Arg Cys Gly Gly Phe Leu
 65                  70                  75                  80

Arg Lys Leu Ser Leu Arg Gly Cys Ile Gly Val Gly Asp Ser Ser Leu
                 85                  90                  95

Lys Thr Phe Ala Gln Asn Cys Arg Asn Ile Glu His Leu Asn Leu Asn
            100                 105                 110

Gly Cys Thr Lys Ile Thr Asp Ser Thr Cys Tyr Ser Leu Ser Arg Phe
        115                 120                 125

Cys Ser Lys Leu Lys His Leu Asp Leu Thr Ser Cys Val Ser Ile Thr
```

130 135 140

Asn Ser Ser Leu Lys Gly Ile Ser Glu Gly Cys Arg Asn Leu Glu Tyr
145 150 155 160

Leu Asn Leu Ser Trp Cys Asp Gln Ile Thr Lys Asp Gly Ile Glu Ala
165 170 175

Leu Val Arg Gly Cys Arg Gly Leu Lys Ala Leu Leu Leu Arg Gly Cys
180 185 190

Thr Gln Leu Glu Asp Glu Ala Leu Lys His Ile Gln Asn Tyr Cys His
195 200 205

Glu Leu Val Ser Leu Asn Leu Gln Ser Cys Ser Arg Ile Thr Asp Glu
210 215 220

Gly Val Val Gln Ile Cys Arg Gly Cys His Arg Leu Gln Ala Leu Cys
225 230 235 240

Leu Ser Gly Cys Ser Asn Leu Thr Asp Ala Ser Leu Thr Ala Leu Gly
245 250 255

Leu Asn Cys Pro Arg Leu Gln Ile Leu Glu Ala Ala Arg Cys Ser His
260 265 270

Leu Thr Asp Ala Gly Phe Thr Leu Leu Ala Arg Asn Cys His Glu Leu
275 280 285

Glu Lys Met Asp Leu Glu Glu Cys Ile Leu Ile Thr Asp Ser Thr Leu
290 295 300

Ile Gln Leu Ser Ile His Cys Pro Lys Leu Gln Ala Leu Ser Leu Ser
305 310 315 320

His Cys Glu Leu Ile Thr Asp Asp Gly Ile Leu His Leu Ser Asn Ser
325 330 335

Thr Cys Gly His Glu Arg Leu Arg Val Leu Glu Leu Asp Asn Cys Leu
340 345 350

Leu Ile Thr Asp Val Ala Leu Glu His Leu Glu Asn Cys Arg Gly Leu
355 360 365

Glu Arg Leu Glu Leu Tyr Asp Cys Gln Gln Val Thr Arg Ala Gly Ile
370 375 380

Lys Arg Met Arg Ala Gln Leu Pro His Val Lys Val His Ala Tyr Phe
385 390 395 400

Ala Pro Val Thr Pro Pro Thr Ala Val Ala Gly Ser Gly Gln Arg Leu
405 410 415

Cys Arg Cys Cys Val Ile Leu
420

<210> 89
<211> 425
<212> PRT
<213> Homo sapiens

<400> 89

```
Ser Ala Met Val Phe Ser Asn Asn Asp Glu Gly Leu Ile Asn Lys Lys
  1               5                  10                  15

Leu Pro Lys Glu Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Ile Val
            20                  25                  30

Thr Leu Cys Arg Cys Ala Gln Ile Ser Lys Ala Trp Asn Ile Leu Ala
        35                  40                  45

Leu Asp Gly Ser Asn Trp Gln Arg Ile Asp Leu Phe Asn Phe Gln Ile
    50                  55                  60

Asp Val Glu Gly Arg Val Val Glu Asn Ile Ser Lys Arg Cys Gly Gly
65                  70                  75                  80

Phe Leu Arg Lys Leu Ser Leu Arg Gly Cys Ile Gly Val Gly Asp Ser
                85                  90                  95

Ser Leu Lys Thr Phe Ala Gln Asn Cys Arg Asn Ile Glu His Leu Asn
            100                 105                 110

Leu Asn Gly Cys Thr Lys Ile Thr Asp Ser Thr Cys Tyr Ser Leu Ser
        115                 120                 125

Arg Phe Cys Ser Lys Leu Lys His Leu Asp Leu Thr Ser Cys Val Ser
    130                 135                 140

Ile Thr Asn Ser Ser Leu Lys Gly Ile Ser Glu Gly Cys Arg Asn Leu
145                 150                 155                 160

Glu Tyr Leu Asn Leu Ser Trp Cys Asp Gln Ile Thr Lys Asp Gly Ile
                165                 170                 175

Glu Ala Leu Val Arg Gly Cys Arg Gly Leu Lys Ala Leu Leu Leu Arg
            180                 185                 190

Gly Cys Thr Gln Leu Glu Asp Glu Ala Leu Lys His Ile Gln Asn Tyr
        195                 200                 205

Cys His Glu Leu Val Ser Leu Asn Leu Gln Ser Cys Ser Arg Ile Thr
    210                 215                 220

Asp Glu Gly Val Val Gln Ile Cys Arg Gly Cys His Arg Leu Gln Ala
225                 230                 235                 240

Leu Cys Leu Ser Gly Cys Ser Asn Leu Thr Asp Ala Ser Leu Thr Ala
                245                 250                 255

Leu Gly Leu Asn Cys Pro Arg Leu Gln Ile Leu Glu Ala Ala Arg Cys
            260                 265                 270

Ser His Leu Thr Asp Ala Gly Phe Thr Leu Leu Ala Arg Asn Cys His
        275                 280                 285

Glu Leu Glu Lys Met Asp Leu Glu Glu Cys Ile Leu Ile Thr Asp Ser
    290                 295                 300

Thr Leu Ile Gln Leu Ser Ile His Cys Pro Lys Leu Gln Ala Leu Ser
305                 310                 315                 320

Leu Ser His Cys Glu Leu Ile Thr Asp Asp Gly Ile Leu His Leu Ser
                325                 330                 335
```

```
Asn Ser Thr Cys Gly His Glu Arg Leu Arg Val Leu Glu Leu Asp Asn
            340                 345                 350

Cys Leu Leu Ile Thr Asp Val Ala Leu Glu His Leu Glu Asn Cys Arg
        355                 360                 365

Gly Leu Glu Arg Leu Glu Leu Tyr Asp Cys Gln Gln Val Thr Arg Ala
    370                 375                 380

Gly Ile Lys Arg Met Arg Ala Gln Leu Pro His Val Lys Val His Ala
385                 390                 395                 400

Tyr Phe Ala Pro Val Thr Pro Pro Thr Ala Val Ala Gly Ser Gly Gln
                405                 410                 415

Arg Leu Cys Arg Cys Cys Val Ile Leu
            420                 425


<210> 90
<211> 423
<212> PRT
<213> Homo sapiens

<400> 90
Met Val Phe Ser Asn Asn Asp Glu Gly Leu Ile Asn Lys Lys Leu Pro
  1               5                  10                  15

Lys Glu Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Ile Val Thr Leu
             20                  25                  30

Cys Arg Cys Ala Gln Ile Ser Lys Ala Trp Asn Ile Leu Ala Leu Asp
         35                  40                  45

Gly Ser Asn Trp Gln Arg Ile Asp Leu Phe Asn Phe Gln Thr Asp Val
     50                  55                  60

Glu Gly Arg Val Val Glu Asn Ile Ser Lys Arg Cys Gly Gly Phe Leu
 65                  70                  75                  80

Lys Lys Leu Ser Leu Arg Gly Cys Ile Gly Val Gly Asp Ser Ser Leu
                 85                  90                  95

Lys Thr Phe Ala Gln Asn Cys Arg Asn Ile Glu His Leu Asn Leu Asn
            100                 105                 110

Gly Cys Thr Lys Ile Thr Asp Ser Thr Cys Tyr Ser Leu Ser Arg Phe
        115                 120                 125

Cys Ser Lys Leu Lys His Leu Asp Leu Thr Ser Cys Val Ser Ile Thr
    130                 135                 140

Asn Ser Ser Leu Lys Gly Ile Ser Glu Gly Cys Arg Asn Leu Glu Tyr
145                 150                 155                 160

Leu Asn Leu Ser Trp Cys Asp Gln Ile Thr Lys Asp Gly Ile Glu Ala
                165                 170                 175

Leu Val Arg Gly Cys Arg Gly Leu Lys Ala Leu Leu Leu Arg Gly Cys
            180                 185                 190

Thr Gln Leu Glu Asp Glu Ala Leu Lys His Ile Gln Asn Tyr Cys His
        195                 200                 205
```

```
Glu Leu Val Ser Leu Asn Leu Gln Ser Cys Ser Arg Ile Thr Asp Glu
    210                 215                 220

Gly Val Val Gln Ile Cys Arg Gly Cys His Arg Leu Gln Ala Leu Cys
225                 230                 235                 240

Leu Ser Gly Cys Ser Asn Leu Thr Asp Ala Ser Leu Thr Ala Leu Gly
                245                 250                 255

Leu Asn Cys Pro Arg Leu Gln Ile Leu Glu Ala Ala Arg Cys Ser His
            260                 265                 270

Leu Thr Asp Ala Gly Phe Thr Leu Leu Ala Arg Asn Cys His Glu Leu
        275                 280                 285

Glu Lys Met Asp Leu Glu Glu Cys Ile Leu Ile Thr Asp Ser Thr Leu
    290                 295                 300

Ile Gln Leu Ser Ile His Cys Pro Lys Leu Gln Ala Leu Ser Leu Ser
305                 310                 315                 320

His Cys Glu Leu Ile Thr Asp Asp Gly Ile Leu His Leu Ser Asn Ser
                325                 330                 335

Thr Cys Gly His Glu Arg Leu Arg Val Leu Glu Leu Asp Asn Cys Leu
            340                 345                 350

Leu Ile Thr Asp Val Ala Leu Glu His Leu Glu Asn Cys Arg Gly Leu
        355                 360                 365

Glu Arg Leu Glu Leu Tyr Asp Cys Gln Gln Val Thr Arg Ala Gly Ile
    370                 375                 380

Lys Arg Met Arg Ala Gln Leu Pro His Val Lys Val His Ala Tyr Phe
385                 390                 395                 400

Ala Pro Val Thr Pro Pro Thr Ala Val Ala Gly Ser Gly Gln Arg Leu
                405                 410                 415

Cys Arg Cys Cys Val Ile Leu
            420


<210> 91
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  F-box domain
      sequence

<400> 91
Phe Ser Leu Leu Arg Leu Pro Asp Asp Leu Leu Glu Lys Ile Leu Ser
  1               5                  10                  15

Arg Leu Pro Leu Lys Asp Leu Leu Ser Leu Ser Lys Val Ser Lys Lys
             20                  25                  30

Phe Arg Ser Leu Val Asp Ser Leu Leu Asp Val Lys Leu Leu
         35                  40                  45
```

<210> 92
<211> 172
<212> PRT
<213> Homo sapiens

<400> 92
Met Val Gly Pro Ala Pro Arg Arg Arg Leu Arg Pro Leu Ala Ala Leu
1 5 10 15

Ala Leu Val Leu Ala Leu Ala Pro Gly Leu Pro Thr Ala Arg Ala Gly
20 25 30

Gln Thr Pro Arg Pro Ala Glu Arg Gly Pro Pro Val Arg Leu Phe Thr
35 40 45

Glu Glu Glu Leu Ala Arg Tyr Gly Gly Glu Glu Glu Asp Gln Pro Ile
50 55 60

Tyr Leu Ala Val Lys Gly Val Val Phe Asp Val Thr Ser Gly Lys Glu
65 70 75 80

Phe Tyr Gly Arg Gly Ala Pro Tyr Asn Ala Leu Thr Gly Lys Asp Ser
85 90 95

Thr Arg Gly Val Ala Lys Met Ser Leu Asp Pro Ala Asp Leu Thr His
100 105 110

Asp Thr Thr Gly Leu Thr Ala Lys Glu Leu Glu Ala Leu Asp Glu Val
115 120 125

Phe Thr Lys Val Tyr Lys Ala Lys Tyr Pro Ile Val Gly Tyr Thr Ala
130 135 140

Arg Arg Ile Leu Asn Glu Asp Gly Ser Pro Asn Leu Asp Phe Lys Pro
145 150 155 160

Glu Asp Gln Pro His Phe Asp Ile Lys Asp Glu Phe
165 170

<210> 93
<211> 171
<212> PRT
<213> Mus musculus

<400> 93
Met Ala Arg Pro Ala Pro Trp Trp Arg Leu Arg Leu Leu Ala Ala Leu
1 5 10 15

Val Leu Ala Leu Ala Leu Val Pro Val Pro Ser Ala Trp Ala Gly Gln
20 25 30

Thr Pro Arg Pro Ala Glu Arg Gly Pro Pro Val Arg Leu Phe Thr Glu
35 40 45

Glu Glu Leu Ala Arg Tyr Gly Gly Glu Glu Glu Asp Gln Pro Ile Tyr
50 55 60

Leu Ala Val Lys Gly Val Val Phe Asp Val Thr Ser Gly Lys Glu Phe
65 70 75 80

Tyr Gly Arg Gly Ala Pro Tyr Asn Ala Leu Ala Gly Lys Asp Ser Ser

85 90 95

Arg Gly Val Ala Lys Met Ser Leu Asp Pro Ala Asp Leu Thr His Asp
100 105 110

Thr Thr Gly Leu Thr Ala Lys Glu Leu Glu Ala Leu Asp Asp Val Phe
115 120 125

Ser Lys Val Tyr Lys Ala Lys Tyr Pro Ile Val Gly Tyr Thr Ala Arg
130 135 140

Arg Ile Leu Asn Glu Asp Gly Ser Pro Asn Leu Asp Phe Lys Pro Glu
145 150 155 160

Asp Gln Pro His Phe Asp Ile Lys Asp Glu Phe
165 170

<210> 94
<211> 100
<212> PRT
<213> Arabidopsis thaliana

<400> 94
Met Glu Phe Thr Ala Glu Gln Leu Ser Gln Tyr Asn Gly Thr Asp Glu
1 5 10 15

Ser Lys Pro Ile Tyr Val Ala Ile Lys Gly Arg Val Phe Asp Val Thr
20 25 30

Thr Gly Lys Ser Phe Tyr Gly Ser Gly Gly Asp Tyr Ser Met Phe Ala
35 40 45

Gly Lys Asp Ala Ser Arg Ala Leu Gly Lys Met Ser Lys Asn Glu Glu
50 55 60

Asp Val Ser Pro Ser Leu Glu Gly Leu Thr Glu Lys Glu Ile Asn Thr
65 70 75 80

Leu Asn Asp Trp Glu Thr Lys Phe Glu Ala Lys Tyr Pro Val Val Gly
85 90 95

Arg Val Val Ser
100

<210> 95
<211> 232
<212> PRT
<213> Oryza sativa

<400> 95
Met Ala Ala Ala Val Ala Glu Leu Trp Glu Thr Leu Lys Gln Ala Ile
1 5 10 15

Val Ala Tyr Thr Gly Leu Ser Pro Ala Ala Phe Phe Thr Ala Val Ala
20 25 30

Ala Ala Ala Ala Leu Tyr His Val Val Ser Gly Ile Phe Ala Gly Pro
35 40 45

Pro Pro Pro Pro Pro Pro Arg Pro Arg Asp Glu Pro Glu Ala Glu Pro
50 55 60

```
Leu Pro Pro Pro Val Gln Leu Gly Glu Val Ser Glu Glu Glu Leu Arg
 65                  70                  75                  80

Gln Tyr Asp Gly Ser Asp Pro Lys Lys Pro Leu Leu Met Ala Ile Lys
                85                  90                  95

Gly Gln Ile Tyr Asp Val Thr Gln Ser Arg Met Phe Tyr Gly Pro Gly
            100                 105                 110

Gly Pro Tyr Ala Leu Phe Ala Gly Lys Asp Ala Ser Arg Ala Leu Ala
        115                 120                 125

Lys Met Ser Phe Glu Pro Gln Asp Leu Thr Gly Asp Ile Ser Gly Leu
    130                 135                 140

Gly Pro Phe Glu Leu Asp Ala Leu Gln Asp Trp Glu Tyr Lys Phe Met
145                 150                 155                 160

Gly Lys Tyr Val Lys Val Gly Thr Val Lys Lys Thr Val Pro Val Glu
                165                 170                 175

Asp Gly Ala Pro Ser Thr Ser Pro Glu Thr Thr Glu Thr Ala Ala Ala
            180                 185                 190

Ala Glu Pro Glu Lys Ala Pro Ala Thr Glu Glu Lys Pro Arg Glu Val
        195                 200                 205

Ser Ser Glu Glu Val Lys Glu Lys Glu Asp Ala Val Ala Ala Ala Ala
    210                 215                 220

Pro Asp Glu Gly Ala Lys Glu Ser
225                 230


<210> 96
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  Steroid
      binding domain sequence

<400> 96
Asp Phe Thr Pro Glu Glu Leu Arg Lys Tyr Asp Gly Ser Asp Glu Asp
  1               5                  10                  15

Lys Pro Ile Tyr Leu Ala Ile Lys Gly Lys Val Tyr Asp Val Thr Arg
             20                  25                  30

Gly Arg Lys Phe Tyr Gly Pro Gly Gly Pro Tyr Ser Leu Phe Ala Gly
         35                  40                  45

Arg Asp Ala Ser Arg Ala Leu Ala Thr Met Ser Phe Asp Glu Glu Asp
     50                  55                  60

Leu Lys Asp Ser Asp Glu Glu Ile Asp Asp Leu Ser Asp Leu Ser Ala
 65                  70                  75                  80

Asp Glu Leu Glu Ala Leu Arg Glu Trp Glu Thr Lys Phe Lys Ala Lys
                85                  90                  95
```

Tyr Pro Val Val Gly Arg Leu Ile
100

<210> 97
<211> 309
<212> PRT
<213> Homo sapiens

<400> 97
Met Glu Ala Leu Ala Leu Val Gly Ala Trp Tyr Thr Ala Arg Lys Ser
1 5 10 15

Ile Thr Val Ile Cys Asp Phe Tyr Ser Leu Ile Arg Leu His Phe Ile
20 25 30

Pro Arg Leu Gly Ser Arg Ala Asp Leu Ile Lys Gln Tyr Gly Arg Trp
35 40 45

Ala Val Val Ser Gly Ala Thr Asp Gly Ile Gly Lys Ala Tyr Ala Glu
50 55 60

Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu Ile Ser Arg Asn Glu
65 70 75 80

Glu Lys Leu Gln Val Val Ala Lys Asp Ile Ala Asp Thr Tyr Lys Val
85 90 95

Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser Gly Arg Glu Ile Tyr
100 105 110

Leu Pro Ile Arg Glu Ala Leu Lys Asp Lys Asp Val Gly Ile Leu Val
115 120 125

Asn Asn Val Gly Val Phe Tyr Pro Tyr Pro Gln Tyr Phe Thr Gln Leu
130 135 140

Ser Glu Asp Lys Leu Trp Asp Ile Ile Asn Val Asn Ile Ala Ala Ala
145 150 155 160

Ser Leu Met Val His Val Val Leu Pro Gly Met Val Glu Arg Lys Lys
165 170 175

Gly Ala Ile Val Thr Ile Ser Ser Gly Ser Cys Cys Lys Pro Thr Pro
180 185 190

Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr Leu Asp His Phe Ser
195 200 205

Arg Ala Leu Gln Tyr Glu Tyr Ala Ser Lys Gly Ile Phe Val Gln Ser
210 215 220

Leu Ile Pro Phe Tyr Val Ala Thr Ser Met Thr Ala Pro Ser Asn Phe
225 230 235 240

Leu His Arg Cys Ser Trp Leu Val Pro Ser Pro Lys Val Tyr Ala His
245 250 255

His Ala Val Ser Thr Leu Gly Ile Ser Lys Arg Thr Thr Gly Tyr Trp
260 265 270

Ser His Ser Ile Gln Phe Leu Phe Ala Gln Tyr Met Pro Glu Trp Leu
275 280 285

```
Trp Val Trp Gly Ala Asn Ile Leu Asn Arg Ser Leu Arg Lys Glu Ala
    290                 295                 300

Leu Ser Cys Thr Ala
305
```

<210> 98
<211> 339
<212> PRT
<213> Drosophila melanogaster

<400> 98

```
Met Gln Pro Val Leu Glu Val Ser Ile Tyr Thr Leu Leu Lys Met Ala
  1               5                  10                  15

Phe Ile Trp Gln Leu Ile Ser Ala Ala Ile Tyr Leu Val Gly Leu Leu
            20                  25                  30

Thr Ile Gly Val Phe Leu Tyr Asp Asn Leu Lys Ser Leu Val Ser Ile
        35                  40                  45

Ile Lys Ala Val Leu Glu Pro Tyr Phe Gln Pro His Leu Pro Arg Thr
    50                  55                  60

Leu Val Asp Lys Phe Gly Gln Trp Ala Val Val Thr Gly Ala Thr Asp
65                  70                  75                  80

Gly Ile Gly Lys Glu Tyr Ala Arg Glu Leu Ala Arg Gln Gly Ile Asn
                85                  90                  95

Leu Val Leu Ile Ser Arg Thr Lys Glu Lys Leu Ile Ala Val Thr Asn
            100                 105                 110

Glu Ile Glu Ser Gln Tyr Lys Val Lys Thr Lys Trp Ile Ala Ala Asp
        115                 120                 125

Phe Ala Lys Gly Arg Glu Val Tyr Asp Gln Ile Glu Lys Glu Leu Ala
    130                 135                 140

Gly Ile Asp Val Gly Ile Leu Val Asn Asn Val Gly Met Met Tyr Glu
145                 150                 155                 160

His Pro Glu Ser Leu Asp Leu Val Ser Glu Asp Leu Leu Trp Asn Leu
                165                 170                 175

Leu Thr Val Asn Met Gly Ser Val Thr Met Leu Thr Arg Lys Ile Leu
            180                 185                 190

Pro Gln Met Ile Gly Arg Arg Lys Gly Ala Ile Val Asn Leu Gly Ser
        195                 200                 205

Ser Ser Glu Leu Gln Pro Leu Pro Asn Met Thr Val Tyr Ala Ala Ser
    210                 215                 220

Lys Lys Phe Val Thr Tyr Phe Ser Lys Ala Leu Glu Leu Glu Val Ala
225                 230                 235                 240

Glu His Asn Ile His Val Gln Leu Val Met Pro Asn Phe Val Val Thr
                245                 250                 255

Lys Met Asn Ala Tyr Thr Asp Arg Val Met Gln Gly Gly Leu Phe Phe
```

260 265 270

Pro Asn Ala Tyr Thr Phe Ala Arg Ser Ala Val Phe Thr Leu Gly Lys
275 280 285

Thr Ser Glu Thr Asn Gly Phe Trp Thr His Gly Ile Gln Tyr Ala Ile
290 295 300

Met Lys Leu Ala Pro Leu Pro Ile Arg Thr Tyr Leu Gly His Gln Leu
305 310 315 320

Phe Lys Arg Leu Arg Ile Glu Ala Leu Glu Gln Lys Gln Lys Lys Leu
325 330 335

Lys Leu Thr

<210> 99
<211> 312
<212> PRT
<213> Homo sapiens

<400> 99
Met Glu Ser Ala Leu Pro Ala Ala Gly Phe Leu Tyr Trp Val Gly Ala
1 5 10 15

Gly Thr Val Ala Tyr Leu Ala Leu Arg Ile Ser Tyr Ser Leu Phe Thr
20 25 30

Ala Leu Arg Val Trp Gly Val Gly Asn Glu Ala Gly Val Gly Pro Gly
35 40 45

Leu Gly Glu Trp Ala Val Val Thr Gly Ser Thr Asp Gly Ile Gly Lys
50 55 60

Ser Tyr Ala Glu Glu Leu Ala Lys His Gly Met Lys Val Val Leu Ile
65 70 75 80

Ser Arg Ser Lys Asp Lys Leu Asp Gln Val Ser Ser Glu Ile Lys Glu
85 90 95

Lys Phe Lys Val Glu Thr Arg Thr Ile Ala Val Asp Phe Ala Ser Glu
100 105 110

Asp Ile Tyr Asp Lys Ile Lys Thr Gly Leu Ala Gly Leu Glu Ile Gly
115 120 125

Ile Leu Val Asn Asn Val Gly Met Ser Tyr Glu Tyr Pro Glu Tyr Phe
130 135 140

Leu Asp Val Pro Asp Leu Asp Asn Val Ile Lys Lys Met Ile Asn Ile
145 150 155 160

Asn Ile Leu Ser Val Cys Lys Met Thr Gln Leu Val Leu Pro Gly Met
165 170 175

Val Glu Arg Ser Lys Gly Ala Ile Leu Asn Ile Ser Ser Gly Ser Gly
180 185 190

Met Leu Pro Val Pro Leu Leu Thr Ile Tyr Ser Ala Thr Lys Thr Phe
195 200 205

```
Val Asp Phe Phe Ser Gln Cys Leu His Glu Glu Tyr Arg Ser Lys Gly
    210                 215                 220

Val Phe Val Gln Ser Val Leu Pro Tyr Phe Val Ala Thr Lys Leu Ala
225                 230                 235                 240

Lys Ile Arg Lys Pro Thr Leu Asp Lys Pro Ser Pro Glu Thr Phe Val
                245                 250                 255

Lys Ser Ala Ile Lys Thr Val Gly Leu Gln Ser Arg Thr Asn Gly Tyr
            260                 265                 270

Leu Ile His Ala Leu Met Gly Ser Ile Ile Ser Asn Leu Pro Ser Trp
        275                 280                 285

Ile Tyr Leu Lys Ile Val Met Asn Met Asn Lys Ser Thr Arg Ala His
    290                 295                 300

Tyr Leu Lys Lys Thr Lys Lys Asn
305                 310


<210> 100
<211> 312
<212> PRT
<213> Anas platyrhynchos

<400> 100
Met Leu Pro Ala Ala Gly Leu Leu Trp Trp Val Gly Ala Leu Gly Ala
  1               5                  10                  15

Leu Tyr Ala Ala Val Arg Gly Ala Leu Gly Leu Leu Gly Ala Leu Arg
             20                  25                  30

Val Trp Gly Ile Gly Ala Gly Arg Ala Ala Leu Gly Pro Gly Leu Gly
         35                  40                  45

Ala Trp Ala Val Val Thr Gly Ala Thr Asp Gly Ile Gly Lys Ala Tyr
     50                  55                  60

Ala Lys Glu Leu Ala Lys Arg Gly Met Lys Val Ala Leu Ile Ser Arg
 65                  70                  75                  80

Ser Lys Glu Lys Leu Asp Gln Val Ala Gly Glu Ile Thr Glu Gln Tyr
                 85                  90                  95

Gly Val Glu Thr Lys Val Ile Val Ala Asp Phe Gly Glu Arg Glu Asp
            100                 105                 110

Ile Tyr Asp Arg Ile Arg Ala Gly Leu Glu Gly Leu Glu Ile Gly Val
        115                 120                 125

Leu Val Asn Asn Val Gly Ile Ser Tyr Ser Tyr Pro Glu Tyr Phe Ile
    130                 135                 140

Asp Val Pro Asp Leu Asp Lys Thr Ile Asp Lys Met Ile Asn Ile Asn
145                 150                 155                 160

Ile Met Ser Val Cys Lys Met Thr Arg Leu Val Leu Pro Gly Met Leu
                165                 170                 175

Glu Arg Ser Lys Gly Val Ile Leu Asn Ile Ser Ser Ala Ala Gly Met
            180                 185                 190
```

```
Tyr Pro Thr Pro Leu Leu Thr Leu Tyr Ser Ala Ser Lys Ala Phe Val
        195                 200                 205

Asp Tyr Phe Ser Arg Gly Leu His Ala Glu Tyr Lys Ser Lys Gly Ile
    210                 215                 220

Ile Val Gln Ser Val Met Pro Tyr Tyr Val Ala Thr Lys Met Ser Lys
225                 230                 235                 240

Ile Ser Lys Pro Ser Phe Asp Lys Pro Thr Pro Glu Thr Tyr Val Arg
                245                 250                 255

Ala Ala Ile Gly Thr Val Gly Leu Gln Ser Gln Thr Asn Gly Cys Leu
            260                 265                 270

Pro His Ala Phe Met Gly Trp Val Phe Ser Ile Leu Pro Thr Ser Thr
        275                 280                 285

Val Met Asn Leu Leu Met Lys Thr Asn Lys Gln Ile Arg Ala Arg Phe
    290                 295                 300

Leu Lys Lys Lys Met Lys Glu Lys
305                 310


<210> 101
<211> 312
<212> PRT
<213> Mus musculus

<400> 101
Met Glu Cys Ala Pro Pro Ala Ala Gly Phe Leu Tyr Trp Val Gly Ala
  1                 5                  10                  15

Ser Thr Ile Ala Tyr Leu Ala Leu Arg Ala Ser Tyr Ser Leu Phe Arg
             20                  25                  30

Ala Phe Gln Val Trp Cys Val Gly Asn Glu Ala Leu Val Gly Pro Arg
         35                  40                  45

Leu Gly Glu Trp Ala Val Val Thr Gly Gly Thr Asp Gly Ile Gly Lys
     50                  55                  60

Ala Tyr Ala Glu Glu Leu Ala Lys Arg Gly Met Lys Ile Val Leu Ile
 65                  70                  75                  80

Ser Arg Ser Gln Asp Lys Leu Asn Gln Val Ser Asn Asn Ile Lys Glu
                 85                  90                  95

Lys Phe Asn Val Glu Thr Arg Thr Ile Ala Val Asp Phe Ser Leu Asp
            100                 105                 110

Asp Ile Tyr Asp Lys Ile Lys Thr Gly Leu Ser Gly Leu Glu Ile Gly
        115                 120                 125

Val Leu Val Asn Asn Val Gly Met Ser Tyr Glu Tyr Pro Glu Tyr Phe
    130                 135                 140

Leu Glu Ile Pro Asp Leu Asp Asn Thr Ile Lys Lys Leu Ile Asn Ile
145                 150                 155                 160

Asn Val Leu Ser Val Cys Lys Val Thr Arg Leu Val Leu Pro Gly Met
```

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                165                 170                 175

Val Glu Arg Ser Lys Gly Val Ile Leu Asn Ile Ser Ser Ala Ser Gly
            180                 185                 190

Met Leu Pro Val Pro Leu Leu Thr Ile Tyr Ser Ala Thr Lys Ala Phe
        195                 200                 205

Val Asp Phe Phe Ser Gln Cys Leu His Glu Glu Tyr Lys Ser Lys Gly
    210                 215                 220

Ile Phe Val Gln Ser Val Met Pro Tyr Leu Val Ala Thr Lys Leu Ala
225                 230                 235                 240

Lys Ile Gln Lys Pro Thr Leu Asp Lys Pro Ser Ala Glu Thr Phe Val
                245                 250                 255

Lys Ser Ala Ile Lys Thr Val Gly Leu Gln Thr Arg Thr Thr Gly Tyr
            260                 265                 270

Val Ile His Ser Leu Met Gly Ser Ile Asn Ser Ile Met Pro Arg Trp
        275                 280                 285

Met Tyr Phe Lys Ile Ile Met Gly Phe Ser Lys Ser Leu Arg Asn Arg
    290                 295                 300

Tyr Leu Lys Lys Arg Lys Lys Asn
305                 310


<210> 102
<211> 271
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  Short Chain
      Alcohol Dehydrogenase (adh_short) domain sequence

<400> 102
Thr Gly Lys Val Ala Leu Val Thr Gly Ala Ser Ser Gly Ile Gly Leu
  1               5                  10                  15

Ala Ile Ala Lys Arg Leu Ala Lys Glu Gly Ala Lys Val Val Val Val
             20                  25                  30

Asp Arg Arg Glu Glu Lys Ala Glu Gln Val Ala Ala Glu Leu Lys Ala
         35                  40                  45

Glu Leu Gly Asp Arg Ala Leu Phe Ile Gln Leu Asp Val Thr Asp Glu
     50                  55                  60

Glu Gln Val Lys Ala Ala Val Ala Gln Ala Val Glu Arg Leu Gly Asp
 65                  70                  75                  80

Arg Leu Asp Val Leu Val Asn Asn Ala Gly Ile Leu Gly Pro Gly Pro
                 85                  90                  95

Pro Phe Glu Glu Leu Ser Glu Glu Asp Trp Glu Arg Val Ile Asp Val
            100                 105                 110

Asn Leu Thr Gly Val Phe Leu Leu Thr Gln Ala Val Leu Pro Ala Met
        115                 120                 125
```

```
Asp His Met Leu Lys Arg Lys Gly Gly Arg Ile Val Asn Ile Ser Ser
    130                 135                 140

Val Ala Gly Leu Asn Val Gly Val Pro Gly Leu Ser Ala Tyr Ser Ala
145                 150                 155                 160

Ser Lys Ala Ala Val Ile Gly Leu Thr Arg Ser Leu Ala Leu Glu Leu
                165                 170                 175

Ala Pro His Gly Thr Gly Ile Arg Val Asn Ala Val Ala Pro Gly Gly
            180                 185                 190

Val Asp Thr Asp Met Thr Lys Ala Leu Arg Ser Arg Leu Ile Glu Ala
        195                 200                 205

Lys Lys Lys Val Arg Glu Val Ala Asp Ile Ala Asp Pro Glu Leu Glu
    210                 215                 220

Glu Arg Ile Thr Ser Thr Ile Thr Pro Leu Gly Arg Tyr Gly Val Thr
225                 230                 235                 240

Pro Glu Glu Ile Ala Asn Ala Val Leu Phe Leu Ala Ser Asp Gly Ala
                245                 250                 255

Ser Tyr Ser Val Thr Gly Gln Thr Leu Asn Val Asp Gly Gly Leu
            260                 265                 270


<210> 103
<211> 1961
<212> PRT
<213> Homo sapiens

<400> 103
Met Ala Gln Gln Ala Ala Asp Lys Tyr Leu Tyr Val Asp Lys Asn Phe
  1               5                  10                  15

Ile Asn Asn Pro Leu Ala Gln Ala Asp Trp Ala Ala Lys Lys Leu Val
            20                  25                  30

Trp Val Pro Ser Asp Lys Ser Gly Phe Glu Pro Ala Ser Leu Lys Glu
        35                  40                  45

Glu Val Gly Glu Arg Gly His Val Glu Leu Val Glu Asn Gly Lys Lys
    50                  55                  60

Val Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe
65                  70                  75                  80

Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser
                85                  90                  95

Val Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr
            100                 105                 110

Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro
        115                 120                 125

Ile Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His
    130                 135                 140

Glu Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser
```

```
145                 150                 155                 160

Met Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser
                165                 170                 175

Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala
            180                 185                 190

Tyr Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu
        195                 200                 205

Arg Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala
    210                 215                 220

Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg
225                 230                 235                 240

Ile Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr
                245                 250                 255

Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg
            260                 265                 270

Thr Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu
        275                 280                 285

Lys Thr Asp Leu Leu Leu Glu Pro Tyr Asn Lys Tyr Arg Phe Leu Ser
    290                 295                 300

Asn Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln
305                 310                 315                 320

Glu Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Glu Glu Glu Gln
                325                 330                 335

Met Gly Leu Leu Arg Val Ile Ser Gly Val Leu Gln Leu Gly Asn Ile
            340                 345                 350

Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn
        355                 360                 365

Thr Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp
    370                 375                 380

Phe Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr
385                 390                 395                 400

Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala
                405                 410                 415

Leu Ala Lys Ala Thr Tyr Glu Arg Met Phe Arg Trp Leu Val Leu Arg
            420                 425                 430

Ile Asn Lys Ala Leu Asp Lys Thr Lys Arg Gln Gly Ala Ser Phe Ile
        435                 440                 445

Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Asp Leu Asn Ser Phe
    450                 455                 460

Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe
465                 470                 475                 480

Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg Glu Gly
```

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                485                 490                 495

Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile
            500                 505                 510

Asp Leu Ile Glu Lys Pro Ala Gly Pro Pro Gly Ile Leu Ala Leu Leu
        515                 520                 525

Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe Val Glu
    530                 535                 540

Lys Val Met Gln Glu Gln Gly Thr His Pro Lys Phe Gln Lys Pro Lys
545                 550                 555                 560

Gln Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys
                565                 570                 575

Val Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu
            580                 585                 590

Asn Asp Asn Ile Ala Thr Leu Leu His Gln Ser Ser Asp Lys Phe Val
        595                 600                 605

Ser Glu Leu Trp Lys Asp Val Asp Arg Ile Ile Gly Leu Asp Gln Val
    610                 615                 620

Ala Gly Met Ser Glu Thr Ala Leu Pro Gly Ala Phe Lys Thr Arg Lys
625                 630                 635                 640

Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu Ala Lys
                645                 650                 655

Leu Met Ala Ser Leu Arg Asn Thr Asn Pro Asn Phe Val Arg Cys Ile
            660                 665                 670

Ile Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val
        675                 680                 685

Leu Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys
    690                 695                 700

Arg Gln Gly Phe Pro Asn Arg Val Val Phe Gln Glu Phe Arg Gln Arg
705                 710                 715                 720

Tyr Glu Ile Leu Thr Pro Asn Ser Ile Pro Lys Gly Phe Met Asp Gly
                725                 730                 735

Lys Gln Ala Cys Val Leu Met Ile Lys Ala Leu Glu Leu Asp Ser Asn
            740                 745                 750

Leu Tyr Arg Ile Gly Gln Ser Lys Val Phe Phe Arg Ala Gly Val Leu
        755                 760                 765

Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val Ile Ile
    770                 775                 780

Gly Phe Gln Ala Cys Cys Arg Gly Tyr Leu Ala Arg Lys Ala Phe Ala
785                 790                 795                 800

Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Leu Gln Arg Asn Cys
                805                 810                 815

Ala Ala Tyr Leu Lys Leu Arg Asn Trp Gln Trp Trp Arg Leu Phe Thr
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            820                 825                 830

Lys Val Lys Pro Leu Leu Gln Val Ser Arg Gln Glu Glu Met Met
        835                 840                 845

Ala Lys Glu Glu Glu Leu Val Lys Val Arg Glu Lys Gln Leu Ala Ala
    850                 855                 860

Glu Asn Arg Leu Met Glu Met Glu Thr Leu Gln Ser Gln Leu Met Ala
865                 870                 875                 880

Glu Lys Leu Gln Leu Gln Glu Gln Leu Gln Ala Glu Thr Glu Leu Cys
                885                 890                 895

Ala Glu Ala Glu Glu Leu Arg Ala Arg Leu Thr Ala Lys Lys Gln Glu
            900                 905                 910

Leu Glu Glu Ile Cys His Asp Leu Glu Ala Arg Val Glu Glu Glu Glu
        915                 920                 925

Glu Arg Tyr Gln His Leu Gln Ala Glu Lys Lys Lys Met Gln Gln Asn
    930                 935                 940

Ile Gln Glu Leu Glu Glu Gln Leu Glu Glu Glu Glu Ser Ala Arg Gln
945                 950                 955                 960

Lys Leu Gln Leu Glu Lys Val Thr Thr Glu Ala Lys Leu Lys Lys Leu
                965                 970                 975

Glu Glu Glu Gln Ile Ile Leu Glu Asp Gln Asn Cys Lys Leu Ala Lys
            980                 985                 990

Glu Lys Lys Leu Leu Glu Asp Arg Ile Ala Glu Phe Thr Thr Asn Leu
        995                1000                1005

Thr Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys
   1010                1015                1020

His Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu
1025                1030                1035                1040

Lys Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp
                1045                1050                1055

Ser Thr Asp Leu Ser Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala
            1060                1065                1070

Glu Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln Ala Ala
        1075                1080                1085

Leu Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys
   1090                1095                1100

Lys Ile Arg Glu Leu Glu Ser Gln Ile Ser Glu Leu Gln Glu Asp Leu
1105                1110                1115                1120

Glu Ser Glu Arg Ala Ser Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp
                1125                1130                1135

Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Thr Leu
            1140                1145                1150

Asp Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu
```

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      1155                1160                1165

Val Asn Ile Leu Lys Lys Thr Leu Glu Glu Glu Ala Lys Thr His Glu
   1170                1175                1180

Ala Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Val Glu Glu
1185                1190                1195                1200

Leu Ala Glu Gln Leu Glu Gln Thr Lys Arg Val Lys Ala Asn Leu Glu
                1205                1210                1215

Lys Ala Lys Gln Thr Leu Glu Asn Glu Arg Gly Glu Leu Ala Asn Glu
           1220                1225                1230

Val Lys Val Leu Leu Gln Gly Gly Arg Asp Ser Glu His Lys Arg Lys
       1235                1240                1245

Lys Val Glu Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Asn Glu Gly
   1250                1255                1260

Glu Arg Val Arg Thr Glu Leu Ala Asp Lys Val Thr Lys Leu Gln Val
1265                1270                1275                1280

Glu Leu Asp Asn Val Thr Gly Leu Leu Ser Gln Ser Asp Ser Lys Ser
                1285                1290                1295

Ser Lys Leu Thr Lys Asp Phe Ser Ala Leu Glu Ser Gln Leu Gln Asp
           1300                1305                1310

Thr Gln Glu Leu Leu Gln Glu Glu Asn Arg Gln Lys Leu Ser Leu Ser
       1315                1320                1325

Thr Lys Leu Lys Gln Val Glu Asp Glu Lys Asn Ser Phe Arg Glu Gln
   1330                1335                1340

Leu Glu Glu Glu Glu Glu Glu Ala Lys His Asn Leu Glu Lys Gln Ile
1345                1350                1355                1360

Ala Thr Leu His Ala Gln Val Ala Asp Met Lys Lys Lys Met Glu Asp
                1365                1370                1375

Ser Val Gly Cys Leu Glu Thr Ala Glu Glu Val Lys Arg Lys Leu Gln
           1380                1385                1390

Lys Asp Leu Glu Gly Leu Ser Gln Arg His Glu Glu Lys Val Ala Ala
       1395                1400                1405

Tyr Asp Lys Leu Glu Lys Thr Lys Thr Arg Leu Gln Gln Glu Leu Asp
   1410                1415                1420

Asp Leu Leu Val Asp Leu Asp His Gln Arg Gln Ser Ala Cys Asn Leu
1425                1430                1435                1440

Glu Lys Lys Gln Lys Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys Thr
                1445                1450                1455

Ile Ser Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala
           1460                1465                1470

Arg Glu Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu Glu
       1475                1480                1485

Ala Met Glu Gln Lys Ala Glu Leu Glu Arg Leu Asn Lys Gln Phe Arg
```

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   1490                1495                1500

Thr Glu Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser
1505                1510                1515                1520

Val His Glu Leu Glu Lys Ser Lys Arg Ala Leu Glu Gln Gln Val Glu
                1525                1530                1535

Glu Met Lys Thr Gln Leu Glu Glu Leu Glu Asp Glu Leu Gln Ala Thr
            1540                1545                1550

Glu Asp Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala
        1555                1560                1565

Gln Phe Glu Arg Asp Leu Gln Gly Arg Asp Glu Gln Ser Glu Glu Lys
    1570                1575                1580

Lys Lys Gln Leu Val Arg Gln Val Arg Glu Met Glu Ala Glu Leu Glu
1585                1590                1595                1600

Asp Glu Arg Lys Gln Arg Ser Met Ala Val Ala Ala Arg Lys Lys Leu
                1605                1610                1615

Glu Met Asp Leu Lys Asp Leu Glu Ala His Ile Asp Ser Ala Asn Lys
            1620                1625                1630

Asn Arg Asp Glu Ala Ile Lys Gln Leu Arg Lys Leu Gln Ala Gln Met
        1635                1640                1645

Lys Asp Cys Met Arg Glu Leu Asp Asp Thr Arg Ala Ser Arg Glu Glu
    1650                1655                1660

Ile Leu Ala Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu
1665                1670                1675                1680

Ala Glu Met Ile Gln Leu Gln Glu Glu Leu Ala Ala Ala Glu Arg Ala
                1685                1690                1695

Lys Arg Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ala
            1700                1705                1710

Asn Ser Ser Gly Lys Gly Ala Leu Ala Leu Glu Glu Lys Arg Arg Leu
        1715                1720                1725

Glu Ala Arg Ile Ala Gln Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly
    1730                1735                1740

Asn Thr Glu Leu Ile Asn Asp Arg Leu Lys Lys Ala Asn Leu Gln Ile
1745                1750                1755                1760

Asp Gln Ile Asn Ala Asp Leu Asn Leu Glu Arg Gly His Ala Gln Lys
                1765                1770                1775

Asn Glu Asn Ala Arg Gln Gln Leu Glu Arg Gln Asn Lys Glu Leu Lys
            1780                1785                1790

Val Lys Leu Gln Glu Met Glu Gly Thr Val Lys Ser Lys Tyr Lys Ala
        1795                1800                1805

Ser Ile Thr Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Glu Gln Leu
    1810                1815                1820

Asp Asn Glu Thr Lys Glu Arg Gln Ala Ala Cys Lys Gln Val Arg Arg
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1825                1830                1835                1840

Thr Glu Lys Lys Leu Lys Asp Val Leu Leu Gln Val Asp Asp Glu Arg
                1845                1850                1855

Arg Asn Ala Glu Gln Tyr Lys Asp Gln Ala Asp Lys Ala Ser Thr Arg
            1860                1865                1870

Leu Lys Gln Leu Lys Arg Gln Leu Glu Glu Ala Glu Glu Glu Ala Gln
        1875                1880                1885

Arg Ala Asn Ala Ser Arg Arg Lys Leu Gln Arg Glu Leu Glu Asp Ala
    1890                1895                1900

Thr Glu Thr Ala Asp Ala Met Asn Arg Glu Val Ser Ser Leu Lys Asn
1905                1910                1915                1920

Lys Leu Arg Arg Gly Asp Leu Pro Phe Val Val Pro Arg Arg Met Ala
                1925                1930                1935

Arg Lys Gly Ala Gly Asp Gly Ser Asp Glu Glu Val Asp Gly Lys Ala
            1940                1945                1950

Asp Gly Ala Glu Ala Lys Pro Ala Glu
        1955                1960


<210> 104
<211> 1960
<212> PRT
<213> Homo sapiens

<400> 104
Met Ala Gln Gln Ala Ala Asp Lys Tyr Leu Tyr Val Asp Lys Asn Phe
  1               5                  10                  15

Ile Asn Asn Pro Leu Ala Gln Ala Asp Trp Ala Ala Lys Lys Leu Val
             20                  25                  30

Trp Val Pro Ser Asp Lys Ser Gly Phe Glu Pro Ala Ser Leu Lys Glu
         35                  40                  45

Glu Val Gly Glu Glu Ala Ile Val Glu Leu Val Glu Asn Gly Lys Lys
     50                  55                  60

Val Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe
 65                  70                  75                  80

Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser
                 85                  90                  95

Val Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr
            100                 105                 110

Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro
        115                 120                 125

Ile Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His
    130                 135                 140

Glu Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser
145                 150                 155                 160
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Met Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser
                165                 170                 175

Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala
            180                 185                 190

Tyr Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu
        195                 200                 205

Arg Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala
    210                 215                 220

Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg
225                 230                 235                 240

Ile Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr
                245                 250                 255

Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg
            260                 265                 270

Thr Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu
        275                 280                 285

Lys Thr Asp Leu Leu Leu Glu Pro Tyr Asn Lys Tyr Arg Phe Leu Ser
    290                 295                 300

Asn Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln
305                 310                 315                 320

Glu Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Glu Glu Glu Gln
                325                 330                 335

Met Gly Leu Leu Arg Val Ile Ser Gly Val Leu Gln Leu Gly Asn Ile
            340                 345                 350

Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn
        355                 360                 365

Thr Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp
    370                 375                 380

Phe Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr
385                 390                 395                 400

Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala
                405                 410                 415

Leu Ala Lys Ala Thr Tyr Glu Arg Met Phe Arg Trp Leu Val Leu Arg
            420                 425                 430

Ile Asn Lys Ala Leu Asp Lys Thr Lys Arg Gln Gly Ala Ser Phe Ile
        435                 440                 445

Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Asp Leu Asn Ser Phe
    450                 455                 460

Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe
465                 470                 475                 480

Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg Glu Gly
                485                 490                 495
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```
Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile
            500                 505                 510

Asp Leu Ile Glu Lys Pro Ala Gly Pro Pro Gly Ile Leu Ala Leu Leu
        515                 520                 525

Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe Val Glu
    530                 535                 540

Lys Val Met Gln Glu Gln Gly Thr His Pro Lys Phe Gln Lys Pro Lys
545                 550                 555                 560

Gln Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys
                565                 570                 575

Val Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu
            580                 585                 590

Asn Asp Asn Ile Ala Thr Leu Leu His Gln Ser Ser Asp Lys Phe Val
        595                 600                 605

Ser Glu Leu Trp Lys Asp Val Asp Arg Ile Ile Gly Leu Asp Gln Val
    610                 615                 620

Ala Gly Met Ser Glu Thr Ala Leu Pro Gly Ala Phe Lys Thr Arg Lys
625                 630                 635                 640

Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu Ala Lys
                645                 650                 655

Leu Met Ala Thr Leu Arg Asn Thr Asn Pro Asn Phe Val Arg Cys Ile
            660                 665                 670

Ile Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val
        675                 680                 685

Leu Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys
    690                 695                 700

Arg Gln Gly Phe Pro Asn Arg Val Val Phe Gln Glu Phe Arg Gln Arg
705                 710                 715                 720

Tyr Glu Ile Leu Thr Pro Asn Ser Ile Pro Lys Gly Phe Met Asp Gly
                725                 730                 735

Lys Gln Ala Cys Val Leu Met Ile Lys Ala Leu Glu Leu Asp Ser Asn
            740                 745                 750

Leu Tyr Arg Ile Gly Gln Ser Lys Val Phe Phe Arg Ala Gly Val Leu
        755                 760                 765

Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val Ile Ile
    770                 775                 780

Gly Phe Gln Ala Cys Cys Arg Gly Tyr Leu Ala Arg Lys Ala Phe Ala
785                 790                 795                 800

Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Leu Gln Arg Asn Cys
                805                 810                 815

Ala Ala Tyr Leu Lys Leu Arg Asn Trp Gln Trp Trp Arg Leu Phe Thr
            820                 825                 830
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Lys Val Lys Pro Leu Leu Gln Val Ser Arg Gln Glu Glu Glu Met Met
        835                 840                 845

Ala Lys Glu Glu Glu Leu Val Lys Val Arg Glu Lys Gln Leu Ala Ala
    850                 855                 860

Glu Asn Arg Leu Thr Glu Met Glu Thr Leu Gln Ser Gln Leu Met Ala
865                 870                 875                 880

Glu Lys Leu Gln Leu Gln Glu Gln Leu Gln Ala Glu Thr Glu Leu Cys
                885                 890                 895

Ala Glu Ala Glu Glu Leu Arg Ala Arg Leu Thr Ala Lys Lys Gln Glu
            900                 905                 910

Leu Glu Glu Ile Cys His Asp Leu Glu Ala Arg Val Glu Glu Glu Glu
        915                 920                 925

Glu Arg Cys Gln His Leu Gln Ala Glu Lys Lys Lys Met Gln Gln Asn
    930                 935                 940

Ile Gln Glu Leu Glu Glu Gln Leu Glu Glu Glu Glu Ser Ala Arg Gln
945                 950                 955                 960

Lys Leu Gln Leu Glu Lys Val Thr Thr Glu Ala Lys Leu Lys Lys Leu
                965                 970                 975

Glu Glu Glu Gln Ile Ile Leu Glu Asp Gln Asn Cys Lys Leu Ala Lys
            980                 985                 990

Glu Lys Lys Leu Leu Glu Asp Arg Ile Ala Glu Phe Thr Thr Asn Leu
        995                1000                1005

Thr Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys
   1010                1015                1020

His Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu
1025                1030                1035                1040

Lys Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp
                1045                1050                1055

Ser Thr Asp Leu Ser Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala
            1060                1065                1070

Glu Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln Ala Ala
        1075                1080                1085

Leu Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys
   1090                1095                1100

Lys Ile Arg Glu Leu Glu Ser Gln Ile Ser Glu Leu Gln Glu Asp Leu
1105                1110                1115                1120

Glu Ser Glu Arg Ala Ser Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp
                1125                1130                1135

Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Thr Leu
            1140                1145                1150

Asp Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu
        1155                1160                1165
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Val Asn Ile Leu Lys Lys Thr Leu Glu Glu Glu Ala Lys Thr His Glu
   1170                1175                1180

Ala Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Val Glu Glu
1185                1190                1195                1200

Leu Ala Glu Gln Leu Glu Gln Thr Lys Arg Val Lys Ala Asn Leu Glu
                1205                1210                1215

Lys Ala Lys Gln Thr Leu Glu Asn Glu Arg Gly Glu Leu Ala Asn Glu
            1220                1225                1230

Val Lys Val Leu Leu Gln Gly Lys Gly Asp Ser Glu His Lys Arg Lys
        1235                1240                1245

Lys Val Glu Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Asn Glu Gly
    1250                1255                1260

Glu Arg Val Arg Thr Glu Leu Ala Asp Lys Val Thr Lys Leu Gln Val
1265                1270                1275                1280

Glu Leu Asp Asn Val Thr Gly Leu Leu Ser Gln Ser Asp Ser Lys Ser
                1285                1290                1295

Ser Lys Leu Thr Lys Asp Phe Ser Ala Leu Glu Ser Gln Leu Gln Asp
            1300                1305                1310

Thr Gln Glu Leu Leu Gln Glu Glu Asn Arg Gln Lys Leu Ser Leu Ser
        1315                1320                1325

Thr Lys Leu Lys Gln Val Glu Asp Glu Lys Asn Ser Phe Arg Glu Gln
    1330                1335                1340

Leu Glu Glu Glu Glu Glu Ala Lys His Asn Leu Glu Lys Gln Ile Ala
1345                1350                1355                1360

Thr Leu His Ala Gln Val Ala Asp Met Lys Lys Lys Met Glu Asp Ser
                1365                1370                1375

Val Gly Cys Leu Glu Thr Ala Glu Glu Val Lys Arg Lys Leu Gln Lys
            1380                1385                1390

Asp Leu Glu Gly Leu Ser Gln Arg His Glu Glu Lys Val Ala Ala Tyr
        1395                1400                1405

Asp Lys Leu Glu Lys Thr Lys Thr Arg Leu Gln Gln Glu Leu Asp Asp
    1410                1415                1420

Leu Leu Val Asp Leu Asp His Gln Arg Gln Ser Ala Cys Asn Leu Glu
1425                1430                1435                1440

Lys Lys Gln Lys Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys Thr Ile
                1445                1450                1455

Ser Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala Arg
            1460                1465                1470

Glu Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu Glu Ala
        1475                1480                1485

Met Glu Gln Lys Ala Glu Leu Glu Arg Leu Asn Lys Gln Phe Arg Thr
    1490                1495                1500
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Glu Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser Val
1505                1510                1515                1520

His Glu Leu Glu Lys Ser Lys Arg Ala Leu Glu Gln Gln Val Glu Glu
                1525                1530                1535

Met Lys Thr Gln Leu Glu Glu Leu Glu Asp Glu Leu Gln Ala Thr Glu
            1540                1545                1550

Asp Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala Gln
        1555                1560                1565

Phe Glu Arg Asp Leu Gln Gly Arg Asp Glu Gln Ser Glu Glu Lys Lys
    1570                1575                1580

Lys Gln Leu Val Arg Gln Val Arg Glu Met Glu Ala Glu Leu Glu Asp
1585                1590                1595                1600

Glu Arg Lys Gln Arg Ser Met Ala Val Ala Ala Arg Lys Lys Leu Glu
                1605                1610                1615

Met Asp Leu Lys Asp Leu Glu Ala His Ile Asp Ser Ala Asn Lys Asn
            1620                1625                1630

Arg Asp Glu Ala Ile Lys Gln Leu Arg Lys Leu Gln Ala Gln Met Lys
        1635                1640                1645

Asp Cys Met Arg Glu Leu Asp Asp Thr Arg Ala Ser Arg Glu Glu Ile
    1650                1655                1660

Leu Ala Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu Ala
1665                1670                1675                1680

Glu Met Ile Gln Leu Gln Glu Glu Leu Ala Ala Ala Glu Arg Ala Lys
                1685                1690                1695

Arg Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ala Asn
            1700                1705                1710

Ser Ser Gly Lys Gly Ala Leu Ala Leu Glu Glu Lys Arg Arg Leu Glu
        1715                1720                1725

Ala Arg Ile Ala Gln Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn
    1730                1735                1740

Thr Glu Leu Ile Asn Asp Arg Leu Lys Lys Ala Asn Leu Gln Ile Asp
1745                1750                1755                1760

Gln Ile Asn Thr Asp Leu Asn Leu Glu Arg Ser His Ala Gln Lys Asn
                1765                1770                1775

Glu Asn Ala Arg Gln Gln Leu Glu Arg Gln Asn Lys Glu Leu Lys Val
            1780                1785                1790

Lys Leu Gln Glu Met Glu Gly Thr Val Lys Ser Lys Tyr Lys Ala Ser
        1795                1800                1805

Ile Thr Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Glu Gln Leu Asp
    1810                1815                1820

Asn Glu Thr Lys Glu Arg Gln Ala Ala Cys Lys Gln Val Arg Arg Thr
1825                1830                1835                1840
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Glu Lys Lys Leu Lys Asp Val Leu Leu Gln Val Asp Asp Glu Arg Arg
                1845                1850                1855

Asn Ala Glu Gln Tyr Lys Asp Gln Ala Asp Lys Ala Ser Thr Arg Leu
            1860                1865                1870

Lys Gln Leu Lys Arg Gln Leu Glu Glu Ala Glu Glu Glu Ala Gln Arg
        1875                1880                1885

Ala Asn Ala Ser Arg Arg Lys Leu Gln Arg Glu Leu Glu Asp Ala Thr
    1890                1895                1900

Glu Thr Ala Asp Ala Met Asn Arg Glu Val Ser Ser Leu Lys Asn Lys
1905                1910                1915                1920

Leu Arg Arg Gly Asp Leu Pro Phe Val Val Pro Arg Arg Met Ala Arg
                1925                1930                1935

Lys Gly Ala Gly Asp Gly Ser Asp Glu Glu Val Asp Gly Lys Ala Asp
            1940                1945                1950

Gly Ala Glu Ala Lys Pro Ala Glu
        1955                1960


<210> 105
<211> 1961
<212> PRT
<213> Rattus norvegicus

<400> 105
Met Ala Gln Gln Ala Ala Asp Lys Tyr Leu Tyr Val Asp Lys Asn Phe
  1               5                  10                  15

Ile Asn Asn Pro Leu Ala Gln Ala Asp Cys Gly Ala Lys Lys Leu Val
             20                  25                  30

Trp Val Pro Ser Thr Lys Asn Gly Phe Glu Pro Ala Ser Leu Lys Glu
         35                  40                  45

Glu Val Gly Glu Glu Ala Ile Val Glu Leu Val Glu Asn Gly Lys Lys
     50                  55                  60

Val Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe
 65                  70                  75                  80

Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser
                 85                  90                  95

Val Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr
            100                 105                 110

Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro
        115                 120                 125

Ile Tyr Ser Glu Glu Ile Val Asp Met Tyr Lys Gly Lys Lys Arg His
    130                 135                 140

Glu Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser
145                 150                 155                 160

Met Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser
                165                 170                 175
```

```
Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala
            180                 185                 190

His Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu
        195                 200                 205

Arg Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala
    210                 215                 220

Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg
225                 230                 235                 240

Ile Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr
                245                 250                 255

Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg
            260                 265                 270

Thr Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu
        275                 280                 285

Lys Thr Asp Leu Leu Leu Glu Pro Tyr Asn Lys Tyr Arg Phe Leu Ser
    290                 295                 300

Asn Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln
305                 310                 315                 320

Glu Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Glu Asp Glu Gln
                325                 330                 335

Met Gly Leu Leu Arg Val Ile Ser Gly Val Leu Gln Leu Gly Asn Ile
            340                 345                 350

Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn
        355                 360                 365

Thr Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp
    370                 375                 380

Phe Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr
385                 390                 395                 400

Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala
                405                 410                 415

Leu Ala Lys Ala Thr Tyr Glu Arg Met Phe Arg Trp Leu Val Leu Arg
            420                 425                 430

Ile Asn Lys Ala Leu Asp Lys Thr Lys Arg Gln Gly Ala Ser Phe Ile
        435                 440                 445

Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Asp Leu Asn Ser Phe
    450                 455                 460

Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe
465                 470                 475                 480

Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg Glu Gly
                485                 490                 495

Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile
            500                 505                 510
```

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Asp Leu Ile Glu Lys Pro Ala Gly Pro Pro Gly Ile Leu Ala Leu Leu
        515                 520                 525

Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe Val Glu
    530                 535                 540

Lys Val Val Gln Glu Gln Gly Thr His Pro Lys Phe Gln Lys Pro Lys
545                 550                 555                 560

Gln Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys
                565                 570                 575

Val Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu
            580                 585                 590

Asn Asp Asn Ile Ala Thr Leu Leu His Gln Ser Ser Asp Lys Phe Val
        595                 600                 605

Ser Glu Leu Trp Lys Asp Val Asp Arg Ile Ile Gly Leu Asp Gln Val
    610                 615                 620

Ala Gly Met Ser Glu Thr Ala Leu Pro Gly Ala Phe Lys Thr Arg Lys
625                 630                 635                 640

Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu Ala Lys
                645                 650                 655

Leu Met Ala Thr Leu Arg Asn Thr Asn Pro Asn Phe Val Cys Cys Ile
            660                 665                 670

Ile Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val
        675                 680                 685

Leu Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys
    690                 695                 700

Arg Gln Gly Phe Pro Asn Arg Val Val Phe Gln Glu Phe Arg Gln Arg
705                 710                 715                 720

Tyr Glu Ile Leu Thr Pro Asn Ser Ile Pro Lys Gly Phe Met Asp Gly
                725                 730                 735

Lys Gln Ala Cys Val Leu Met Ile Lys Ala Leu Glu Leu Asp Ser Asn
            740                 745                 750

Leu Tyr Arg Ile Gly Gln Ser Lys Val Phe Phe Arg Ser Gly Val Leu
        755                 760                 765

Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val Ile Ile
    770                 775                 780

Gly Phe Gln Ala Cys Cys Arg Gly Tyr Leu Ala Arg Lys Ala Phe Ala
785                 790                 795                 800

Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Leu Gln Arg Asn Cys
                805                 810                 815

Ala Ala Tyr Leu Arg Leu Arg Asn Trp Gln Trp Trp Arg Leu Phe Thr
            820                 825                 830

Lys Val Lys Pro Leu Leu Asn Ser Ile Arg His Glu Asp Glu Leu Leu
        835                 840                 845
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```
Ala Lys Glu Ala Glu Leu Thr Lys Val Arg Glu Lys His Leu Ala Ala
    850                 855                 860

Glu Asn Arg Leu Thr Glu Met Glu Thr Met Gln Ser Gln Leu Met Ala
865                 870                 875                 880

Glu Lys Leu Gln Leu Gln Glu Gln Leu Gln Ala Lys Thr Glu Leu Cys
                885                 890                 895

Ala Glu Ala Glu Glu Leu Arg Ala Arg Leu Thr Ala Lys Lys Gln Glu
            900                 905                 910

Leu Glu Glu Ile Cys His Asp Leu Glu Ala Arg Val Glu Glu Glu Glu
        915                 920                 925

Glu Arg Cys Gln Tyr Leu Gln Ala Glu Lys Lys Lys Met Gln Gln Asn
    930                 935                 940

Ile Gln Glu Leu Glu Glu Gln Leu Glu Glu Glu Glu Ser Ala Arg Gln
945                 950                 955                 960

Lys Leu Gln Leu Glu Lys Val Thr Thr Glu Ala Lys Leu Lys Lys Leu
                965                 970                 975

Glu Glu Asp Gln Ile Ile Met Glu Asp Gln Asn Cys Lys Leu Ala Lys
            980                 985                 990

Glu Lys Lys Leu Leu Glu Asp Arg Val Ala Glu Phe Thr Thr Asp Leu
        995                1000                1005

Met Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys
   1010                1015                1020

His Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu
1025                1030                1035                1040

Lys Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp
                1045                1050                1055

Ser Thr Asp Leu Ser Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala
            1060                1065                1070

Glu Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln Ala Ala
        1075                1080                1085

Leu Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys
   1090                1095                1100

Lys Ile Arg Glu Leu Glu Thr Gln Ile Ser Glu Leu Gln Glu Asp Leu
1105                1110                1115                1120

Glu Ser Glu Arg Ala Cys Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp
                1125                1130                1135

Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Thr Leu
            1140                1145                1150

Asp Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu
        1155                1160                1165

Val Ser Ile Leu Lys Lys Thr Leu Glu Asp Glu Ala Lys Thr His Glu
   1170                1175                1180
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Ala Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Val Glu Glu
1185                1190                1195                1200

Leu Ala Glu Gln Leu Glu Gln Thr Lys Arg Val Lys Ala Thr Leu Glu
                1205                1210                1215

Lys Ala Lys Gln Thr Leu Glu Asn Glu Arg Gly Glu Leu Ala Asn Glu
            1220                1225                1230

Val Lys Ala Leu Leu Gln Gly Lys Gly Asp Ser Glu His Lys Arg Lys
        1235                1240                1245

Lys Val Glu Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Ser Glu Gly
    1250                1255                1260

Glu Arg Val Arg Thr Glu Leu Ala Asp Lys Val Ser Lys Leu Gln Val
1265                1270                1275                1280

Glu Leu Asp Ser Val Thr Gly Leu Leu Asn Gln Ser Asp Ser Lys Ser
                1285                1290                1295

Ser Lys Leu Thr Lys Asp Phe Ser Ala Leu Glu Ser Gln Leu Gln Asp
            1300                1305                1310

Thr Gln Glu Leu Leu Gln Glu Glu Asn Arg Gln Lys Leu Ser Leu Ser
        1315                1320                1325

Thr Lys Leu Lys Gln Met Glu Asp Glu Lys Asn Ser Phe Arg Glu Gln
    1330                1335                1340

Leu Glu Glu Glu Glu Glu Glu Ala Lys Arg Asn Leu Glu Lys Gln Ile
1345                1350                1355                1360

Ala Thr Leu His Ala Gln Val Thr Asp Met Lys Lys Lys Met Glu Asp
                1365                1370                1375

Gly Val Gly Cys Leu Glu Thr Ala Glu Glu Ala Lys Arg Arg Leu Gln
            1380                1385                1390

Lys Asp Leu Glu Gly Leu Ser Gln Arg Leu Glu Glu Lys Val Ala Ala
        1395                1400                1405

Tyr Asp Lys Leu Glu Lys Thr Lys Thr Arg Leu Gln Gln Glu Leu Asp
    1410                1415                1420

Asp Leu Leu Val Asp Leu Asp His Gln Arg Gln Ser Val Ser Asn Leu
1425                1430                1435                1440

Glu Lys Lys Gln Lys Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys Thr
                1445                1450                1455

Ile Ser Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala
            1460                1465                1470

Arg Glu Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu Glu
        1475                1480                1485

Ala Met Glu Gln Lys Ala Glu Leu Glu Arg Leu Asn Lys Gln Phe Arg
    1490                1495                1500

Thr Glu Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser
1505                1510                1515                1520
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Val His Glu Leu Glu Lys Ser Asn Arg Ala Leu Glu Gln Gln Val Glu
                1525                1530                1535

Glu Met Lys Thr Gln Leu Glu Glu Leu Glu Asp Glu Leu Gln Ala Thr
            1540                1545                1550

Glu Asp Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala
        1555                1560                1565

Gln Phe Glu Arg Asp Leu Gln Gly Arg Asp Glu Gln Ser Glu Glu Lys
    1570                1575                1580

Lys Lys Gln Leu Val Arg Gln Val Arg Glu Met Glu Ala Glu Leu Glu
1585                1590                1595                1600

Asp Glu Arg Lys Gln Arg Ser Ile Ala Met Ala Ala Arg Lys Lys Leu
                1605                1610                1615

Glu Met Asp Leu Lys Asp Leu Glu Ala His Ile Asp Thr Ala Asn Lys
            1620                1625                1630

Asn Arg Glu Glu Ala Ile Lys Gln Leu Arg Lys Leu Gln Ala Gln Met
        1635                1640                1645

Lys Asp Cys Met Arg Asp Val Asp Asp Thr Arg Ala Ser Arg Glu Glu
    1650                1655                1660

Ile Leu Ala Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu
1665                1670                1675                1680

Ala Glu Met Ile Gln Leu Gln Glu Glu Leu Ala Ala Ala Glu Arg Ala
                1685                1690                1695

Lys Arg Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ala
            1700                1705                1710

Asn Ser Ser Gly Lys Gly Ala Leu Ala Leu Glu Glu Lys Arg Arg Leu
        1715                1720                1725

Glu Ala Leu Ile Ala Leu Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly
    1730                1735                1740

Asn Thr Glu Leu Ile Asn Asp Arg Leu Lys Lys Ala Asn Leu Gln Ile
1745                1750                1755                1760

Asp Gln Ile Asn Thr Asp Leu Asn Leu Glu Arg Ser His Ala Gln Lys
                1765                1770                1775

Asn Glu Asn Ala Arg Gln Gln Leu Glu Arg Gln Asn Lys Glu Leu Lys
            1780                1785                1790

Ala Lys Leu Gln Glu Met Glu Ser Ala Val Lys Ser Lys Tyr Lys Ala
        1795                1800                1805

Ser Ile Ala Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Glu Gln Leu
    1810                1815                1820

Asp Asn Glu Thr Lys Glu Arg Gln Ala Ala Ser Lys Gln Val Arg Arg
1825                1830                1835                1840

Ala Glu Lys Lys Leu Lys Asp Val Leu Leu Gln Val Glu Asp Glu Arg
                1845                1850                1855
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Arg Asn Ala Glu Gln Phe Lys Asp Gln Ala Asp Lys Ala Ser Thr Arg
          1860                1865                1870

Leu Lys Gln Leu Lys Arg Gln Leu Glu Glu Ala Glu Glu Glu Ala Gln
       1875                1880                1885

Arg Ala Asn Ala Ser Arg Arg Lys Leu Gln Arg Glu Leu Glu Asp Ala
   1890                1895                1900

Thr Glu Thr Ala Asp Ala Met Asn Arg Glu Val Ser Ser Leu Lys Asn
1905                1910                1915                1920

Lys Leu Arg Arg Gly Asp Met Pro Phe Val Val Thr Arg Arg Ile Val
               1925                1930                1935

Arg Lys Gly Thr Gly Asp Cys Ser Asp Glu Glu Val Asp Gly Lys Ala
          1940                1945                1950

Asp Gly Ala Asp Ala Lys Ala Thr Glu
       1955                1960


<210> 106
<211> 1959
<212> PRT
<213> Gallus gallus

<400> 106
Met Ala Gln Arg Asp Ala Asp Lys Tyr Leu Tyr Val Asp Lys Asn Ile
  1               5                  10                  15

Ile Asn Asn Pro Leu Thr Gln Ala Asp Trp Ala Ala Lys Lys Leu Val
             20                  25                  30

Trp Val Pro Ser Glu Lys Ser Gly Phe Glu Ala Ala Ser Leu Lys Glu
         35                  40                  45

Glu Val Gly Asp Glu Ala Ile Val Glu Leu Ala Glu Asn Gly Lys Lys
     50                  55                  60

Val Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe
 65                  70                  75                  80

Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser
                 85                  90                  95

Val Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr
            100                 105                 110

Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro
        115                 120                 125

Ile Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His
    130                 135                 140

Glu Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser
145                 150                 155                 160

Met Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser
                165                 170                 175

Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala
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                180                 185                 190

His Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu
        195                 200                 205

Arg Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala
    210                 215                 220

Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg
225                 230                 235                 240

Ile Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr
                245                 250                 255

Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg
            260                 265                 270

Thr Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu
        275                 280                 285

Lys Thr Asp Leu Leu Leu Glu Pro Tyr Asn Lys Tyr Arg Phe Leu Ser
    290                 295                 300

Asn Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln
305                 310                 315                 320

Glu Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Asp Glu Glu Gln
                325                 330                 335

Ile Gly Leu Leu Lys Val Ile Ser Gly Val Leu Gln Leu Gly Asn Ile
            340                 345                 350

Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn
        355                 360                 365

Thr Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp
    370                 375                 380

Phe Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr
385                 390                 395                 400

Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala
                405                 410                 415

Leu Ala Lys Ala Thr Tyr Glu Gln Met Phe Arg Trp Leu Val Met Arg
            420                 425                 430

Ile Asn Lys Ala Leu Asp Lys Thr Lys Arg Gln Gly Ala Ser Phe Ile
        435                 440                 445

Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Glu Leu Asn Ser Phe
    450                 455                 460

Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe
465                 470                 475                 480

Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Asn Glu Gly
                485                 490                 495

Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile
            500                 505                 510

Asp Leu Ile Glu Lys Pro Ala Gly Pro Pro Gly Ile Leu Ala Leu Leu
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515 520 525

Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe Val Glu
530 535 540

Lys Val Val Gln Glu Gln Gly Thr His Pro Lys Phe Gln Lys Pro Lys
545 550 555 560

Gln Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys
565 570 575

Val Asp Tyr Lys Ala Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu
580 585 590

Asn Asp Asn Ile Ala Thr Leu Leu His Gln Ser Ser Asp Lys Phe Val
595 600 605

Ser Glu Leu Trp Lys Asp Val Asp Arg Ile Val Gly Leu Asp Gln Val
610 615 620

Ala Gly Met Ser Glu Thr Ala Leu Pro Gly Ala Phe Lys Thr Arg Lys
625 630 635 640

Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu Ala Lys
645 650 655

Leu Met Ala Thr Leu Arg Asn Thr Asn Pro Asn Phe Val Arg Cys Ile
660 665 670

Ile Pro Asn His Glu Lys Lys Ala Gly Lys Leu Asp Pro His Leu Val
675 680 685

Leu Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys
690 695 700

Arg Gln Gly Phe Pro Asn Arg Val Val Phe Gln Glu Phe Arg Gln Arg
705 710 715 720

Tyr Glu Ile Leu Thr Pro Asn Ala Ile Pro Lys Gly Phe Met Asp Gly
725 730 735

Lys Gln Ala Cys Val Leu Met Ile Lys Ala Leu Glu Leu Asp Ser Asn
740 745 750

Leu Tyr Arg Ile Gly Gln Ser Lys Val Phe Phe Arg Ala Gly Val Leu
755 760 765

Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val Ile Ile
770 775 780

Gly Phe Gln Ala Cys Cys Arg Gly Tyr Leu Ala Arg Lys Ala Phe Ala
785 790 795 800

Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Leu Gln Arg Asn Cys
805 810 815

Ala Ala Tyr Leu Lys Leu Arg Asn Trp Gln Trp Trp Arg Leu Phe Thr
820 825 830

Lys Val Lys Pro Leu Leu Gln Val Ser Arg Gln Glu Glu Glu Met Met
835 840 845

Ala Lys Glu Glu Glu Leu Ile Lys Val Lys Glu Lys Gln Leu Ala Ala

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    850                 855                 860

Glu Asn Arg Leu Ser Glu Met Glu Thr Phe Gln Ala Gln Leu Met Ala
865                 870                 875                 880

Glu Lys Met Gln Leu Gln Glu Gln Leu Gln Ala Glu Ala Glu Leu Cys
                885                 890                 895

Ala Glu Ala Glu Glu Ile Arg Ala Arg Leu Thr Ala Lys Lys Gln Glu
            900                 905                 910

Leu Glu Glu Ile Cys His Asp Leu Glu Ala Arg Val Glu Glu Glu Glu
        915                 920                 925

Glu Arg Cys Gln His Leu Gln Ala Glu Lys Lys Lys Met Gln Gln Asn
    930                 935                 940

Ile Gln Glu Leu Glu Glu Gln Leu Glu Glu Glu Glu Ser Ala Arg Gln
945                 950                 955                 960

Lys Leu Gln Leu Glu Lys Val Thr Thr Glu Ala Lys Leu Lys Lys Leu
                965                 970                 975

Glu Glu Asp Val Ile Val Leu Glu Asp Gln Asn Leu Lys Leu Ala Lys
            980                 985                 990

Glu Lys Lys Leu Leu Glu Asp Arg Met Ser Glu Phe Thr Thr Asn Leu
        995                1000                1005

Thr Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys
   1010                1015                1020

His Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu
1025                1030                1035                1040

Lys Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp
                1045                1050                1055

Ser Ser Asp Leu His Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala
            1060                1065                1070

Glu Leu Lys Ile Gln Leu Ser Lys Lys Glu Glu Glu Leu Gln Ala Ala
        1075                1080                1085

Leu Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys
   1090                1095                1100

Lys Ile Arg Glu Leu Glu Ser Gln Ile Thr Glu Leu Gln Glu Asp Leu
1105                1110                1115                1120

Glu Ser Glu Arg Ala Ser Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp
                1125                1130                1135

Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Thr Leu
            1140                1145                1150

Asp Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu
        1155                1160                1165

Val Thr Val Leu Lys Lys Thr Leu Glu Asp Glu Ala Lys Thr His Glu
   1170                1175                1180

Ala Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Ile Glu Glu
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1185                1190                1195                1200

Leu Ala Glu Gln Leu Glu Gln Thr Lys Arg Val Lys Ala Asn Leu Glu
                1205                1210                1215

Lys Ala Lys Gln Ala Leu Glu Ser Glu Arg Ala Glu Leu Ser Asn Glu
            1220                1225                1230

Val Lys Val Leu Leu Gln Gly Lys Gly Asp Ala Glu His Lys Arg Lys
        1235                1240                1245

Lys Val Asp Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Thr Glu Gly
    1250                1255                1260

Glu Arg Val Lys Thr Glu Leu Ala Glu Arg Val Asn Lys Leu Gln Val
1265                1270                1275                1280

Glu Leu Asp Asn Val Thr Gly Leu Leu Asn Gln Ser Asp Ser Lys Ser
                1285                1290                1295

Ile Lys Leu Ala Lys Asp Phe Ser Ala Leu Glu Ser Gln Leu Gln Asp
            1300                1305                1310

Thr Gln Glu Leu Leu Gln Glu Glu Thr Arg Leu Lys Leu Ser Phe Ser
        1315                1320                1325

Thr Lys Leu Lys Gln Thr Glu Asp Glu Lys Asn Ala Leu Lys Glu Gln
    1330                1335                1340

Leu Glu Glu Glu Glu Glu Ala Lys Arg Asn Leu Glu Lys Gln Ile Ser
1345                1350                1355                1360

Val Leu Gln Gln Gln Ala Val Glu Ala Arg Lys Lys Met Asp Asp Gly
                1365                1370                1375

Leu Gly Cys Leu Glu Ile Ala Glu Glu Ala Lys Lys Lys Leu Gln Lys
            1380                1385                1390

Asp Leu Glu Ser Leu Thr Gln Arg Tyr Glu Glu Lys Ile Ala Ala Tyr
        1395                1400                1405

Asp Lys Leu Glu Lys Thr Lys Thr Arg Leu Gln Gln Glu Leu Asp Asp
    1410                1415                1420

Ile Ala Val Asp Leu Asp His Gln Arg Gln Thr Val Ser Asn Leu Glu
1425                1430                1435                1440

Lys Lys Gln Lys Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys Asn Ile
                1445                1450                1455

Ser Ala Lys Tyr Ala Glu Glu Arg Asp Arg Ala Glu Ala Glu Ala Arg
            1460                1465                1470

Glu Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu Glu Ala
        1475                1480                1485

Ile Glu Gln Lys Ala Glu Leu Glu Arg Val Asn Lys Gln Phe Arg Thr
    1490                1495                1500

Glu Met Glu Asp Leu Met Ser Ser Lys Asp Asp Val Gly Lys Ser Val
1505                1510                1515                1520

His Glu Leu Glu Lys Ala Lys Arg Ala Leu Glu Gln Gln Val Glu Glu
```

1525 1530 1535

Met Lys Thr Gln Leu Glu Glu Leu Glu Asp Glu Leu Gln Ala Thr Glu
1540 1545 1550

Asp Ala Lys Leu Arg Leu Glu Val Asn Gln Gln Ala Met Lys Ala Gln
1555 1560 1565

Phe Asp Arg Asp Leu Leu Gly Arg Asp Glu Gln Asn Glu Glu Lys Arg
1570 1575 1580

Lys Gln Leu Ile Arg Gln Val Arg Glu Met Glu Val Glu Leu Glu Asp
1585 1590 1595 1600

Glu Arg Lys Gln Arg Ser Ile Ala Val Ala Ala Arg Lys Lys Leu Glu
1605 1610 1615

Leu Asp Leu Lys Asp Leu Glu Ser His Ile Asp Thr Ala Asn Lys Asn
1620 1625 1630

Arg Asp Glu Ala Ile Lys His Val Arg Lys Leu Gln Ala Gln Met Lys
1635 1640 1645

Asp Tyr Met Arg Glu Leu Glu Asp Thr Arg Thr Ser Arg Glu Glu Ile
1650 1655 1660

Leu Ala Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu Ala
1665 1670 1675 1680

Glu Met Ile Gln Leu Gln Glu Glu Leu Ala Ala Ala Glu Arg Ala Lys
1685 1690 1695

Arg Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ala Asn
1700 1705 1710

Ser Ser Gly Lys Gly Ala Leu Ala Met Glu Glu Lys Arg Arg Leu Glu
1715 1720 1725

Ala Arg Ile Ala Gln Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn
1730 1735 1740

Thr Glu Ile Ile Asn Asp Arg Leu Lys Lys Ala Asn Leu Gln Ile Asp
1745 1750 1755 1760

Gln Met Asn Ala Asp Leu Asn Ala Glu Arg Ser Asn Ala Gln Lys Asn
1765 1770 1775

Glu Asn Ala Arg Gln Gln Met Glu Arg Gln Asn Lys Glu Leu Lys Leu
1780 1785 1790

Lys Leu Gln Glu Met Glu Ser Ala Val Lys Ser Lys Tyr Lys Ala Thr
1795 1800 1805

Ile Thr Ala Leu Glu Ala Lys Ile Val Gln Leu Glu Glu Gln Leu Asp
1810 1815 1820

Met Glu Thr Lys Glu Arg Gln Ala Ala Ser Lys Gln Val Arg Arg Ala
1825 1830 1835 1840

Glu Lys Lys Leu Lys Asp Ile Leu Leu Gln Val Asp Asp Glu Arg Arg
1845 1850 1855

Asn Ala Glu Gln Phe Lys Asp Gln Ala Asp Lys Ala Asn Met Arg Leu

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          1860                1865                1870

Lys Gln Leu Lys Arg Gln Leu Glu Glu Ala Glu Glu Glu Ala Gln Arg
       1875                1880                1885

Ala Asn Val Arg Arg Lys Leu Gln Arg Glu Leu Asp Asp Ala Thr Glu
   1890                1895                1900

Thr Ala Asp Ala Met Asn Arg Glu Val Ser Ser Leu Lys Ser Lys Leu
1905                1910                1915                1920

Arg Arg Gly Asp Leu Pro Phe Val Val Thr Arg Arg Leu Val Arg Lys
               1925                1930                1935

Gly Thr Gly Glu Cys Ser Asp Glu Glu Val Asp Gly Lys Ala Glu Ala
           1940                1945                1950

Gly Asp Ala Lys Ala Thr Glu
       1955


<210> 107
<211> 1999
<212> PRT
<213> Rattus norvegicus

<400> 107
Met Ala Gln Arg Asp Ala Asp Lys Tyr Leu Tyr Val Asp Lys Asn Ile
  1               5                  10                  15

Ile Asn Asn Pro Leu Thr Gln Ala Asp Trp Ala Ala Lys Lys Leu Val
            20                  25                  30

Trp Val Pro Ser Glu Lys Ser Gly Phe Glu Ala Ala Ser Leu Lys Glu
         35                  40                  45

Glu Val Gly Asp Glu Ala Ile Val Glu Leu Ala Glu Asn Gly Lys Lys
     50                  55                  60

Val Lys Val Asn Lys Asp Asp Ile Gln Lys Met Asn Pro Pro Lys Phe
 65                  70                  75                  80

Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu Asn Glu Ala Ser
                 85                  90                  95

Val Leu His Asn Leu Lys Glu Arg Tyr Tyr Ser Gly Leu Ile Tyr Thr
            100                 105                 110

Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr Lys Asn Leu Pro
        115                 120                 125

Ile Tyr Ser Glu Glu Ile Val Glu Met Tyr Lys Gly Lys Lys Arg His
    130                 135                 140

Glu Met Pro Pro His Ile Tyr Ala Ile Thr Asp Thr Ala Tyr Arg Ser
145                 150                 155                 160

Met Met Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser
                165                 170                 175

Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala
            180                 185                 190
```

```
His Val Ala Ser Ser His Lys Ser Lys Lys Asp Gln Gly Glu Leu Glu
        195                 200                 205

Arg Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly Asn Ala
    210                 215                 220

Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe Ile Arg
225                 230                 235                 240

Ile Asn Phe Asp Val Asn Gly Tyr Ile Val Gly Ala Asn Ile Glu Thr
                245                 250                 255

Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Lys Glu Glu Arg
            260                 265                 270

Thr Phe His Ile Phe Tyr Tyr Leu Leu Ser Gly Ala Gly Glu His Leu
        275                 280                 285

Lys Thr Asp Leu Leu Leu Glu Pro Tyr Gly Lys Tyr Arg Phe Leu Ser
    290                 295                 300

Asn Gly His Val Thr Ile Pro Gly Gln Gln Asp Lys Asp Met Phe Gln
305                 310                 315                 320

Glu Thr Met Glu Ala Met Arg Ile Met Gly Ile Pro Asp Glu Glu Gln
                325                 330                 335

Ile Gly Leu Leu Lys Val Ile Ser Gly Val Leu Gln Leu Gly Asn Ile
            340                 345                 350

Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro Asp Asn
        355                 360                 365

Thr Ala Ala Gln Lys Val Ser His Leu Leu Gly Ile Asn Val Thr Asp
    370                 375                 380

Phe Thr Arg Gly Ile Leu Thr Pro Arg Ile Lys Val Gly Arg Asp Tyr
385                 390                 395                 400

Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Ile Glu Ala
                405                 410                 415

Leu Ala Lys Ala Thr Tyr Glu Gln Met Phe Arg Trp Leu Val Met Arg
            420                 425                 430

Ile Asn Lys Ala Leu Asp Lys Thr Lys Arg Gln Gly Ala Ser Phe Ile
        435                 440                 445

Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Glu Leu Asn Ser Phe
    450                 455                 460

Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln Leu Phe
465                 470                 475                 480

Asn His Thr Met Phe Ile Glu Gln Glu Glu Tyr Gln Arg Glu Gly Ile
                485                 490                 495

Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro Cys Ile Asp
            500                 505                 510

Leu Ile Glu Arg Pro Ala Asn Pro Pro Gly Val Leu Ala Leu Leu Asp
        515                 520                 525
```

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Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Thr Phe Val Glu Lys
    530                 535                 540

Leu Val Gln Glu Gln Gly Thr His Ser Lys Phe Gln Lys Pro Arg Gln
545                 550                 555                 560

Leu Lys Asp Lys Ala Asp Phe Cys Ile Ile His Tyr Ala Gly Lys Val
                565                 570                 575

Asp Tyr Lys Gly Asp Glu Trp Leu Met Lys Asn Met Asp Pro Leu Asn
            580                 585                 590

Asp Asn Val Ala Thr Leu Leu His Gln Ser Ser Asp Lys Phe Val Ala
        595                 600                 605

Glu Leu Trp Lys Asp Val Asp Arg Ile Val Gly Leu Asp Gln Val Thr
    610                 615                 620

Gly Ile Thr Glu Thr Ala Phe Gly Ser Ala Tyr Lys Thr Lys Lys Gly
625                 630                 635                 640

Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Ser Leu Thr Lys Leu
                645                 650                 655

Met Ala Thr Leu Arg Asn Thr Asn Pro Asn Phe Val Arg Cys Ile Ile
            660                 665                 670

Pro Asn His Glu Lys Arg Ala Gly Lys Leu Asp Pro His Leu Val Leu
        675                 680                 685

Asp Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg Ile Cys Arg
    690                 695                 700

Gln Gly Phe Pro Asn Arg Ile Val Phe Gln Glu Phe Arg Gln Arg Tyr
705                 710                 715                 720

Glu Ile Leu Thr Pro Asn Ala Ile Pro Lys Gly Phe Met Asp Gly Lys
                725                 730                 735

Gln Ala Cys Glu Arg Met Ile Arg Ala Leu Glu Leu Asp Pro Asn Leu
            740                 745                 750

Tyr Arg Ile Gly Gln Ser Lys Ile Phe Phe Arg Ala Gly Val Leu Ala
        755                 760                 765

His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Ile Ile Ile Phe
    770                 775                 780

Phe Gln Ala Val Cys Arg Gly Tyr Leu Ala Arg Lys Ala Phe Ala Lys
785                 790                 795                 800

Lys Gln Gln Gln Leu Ser Ala Leu Lys Ile Leu Gln Arg Asn Cys Ala
                805                 810                 815

Ala Tyr Leu Lys Leu Arg His Trp Gln Trp Trp Arg Val Phe Thr Lys
            820                 825                 830

Val Lys Pro Leu Leu Gln Val Thr Arg Gln Glu Glu Glu Leu Gln Ala
        835                 840                 845

Lys Asp Glu Glu Leu Met Lys Lys Val Glu Lys Gln Thr Lys Val Glu
    850                 855                 860
```

```
Ala Glu Leu Glu Glu Met Glu Arg Lys His Gln Gln Leu Leu Glu Glu
865                 870                 875                 880

Lys Asn Ile Leu Ala Glu Gln Leu Gln Ala Glu Thr Glu Leu Phe Ala
                885                 890                 895

Glu Ala Glu Glu Met Arg Ala Arg Leu Ala Ala Lys Lys Gln Glu Leu
            900                 905                 910

Glu Glu Ile Leu His Asp Leu Glu Ser Arg Val Glu Glu Glu Glu Glu
        915                 920                 925

Arg Asn Gln Ile Leu Gln Asn Glu Lys Lys Lys Glu Gln Gly His Lys
    930                 935                 940

Asn Asp Leu Glu Glu Gln Leu Asp Glu Met Glu Ser Ala Arg Gln Lys
945                 950                 955                 960

Leu Gln Leu Glu Lys Val Thr Thr Glu Ala Lys Leu Lys Lys Leu Glu
                965                 970                 975

Glu Glu Gln Ile Ile Leu Glu Asp Gln Asn Cys Lys Leu Ala Lys Glu
            980                 985                 990

Lys Lys Leu Leu Glu Asp Arg Ile Ala Glu Phe Thr Thr Asn Leu Thr
        995                1000                1005

Glu Glu Glu Glu Lys Ser Lys Ser Leu Ala Lys Leu Lys Asn Lys His
   1010                1015                1020

Glu Ala Met Ile Thr Asp Leu Glu Glu Arg Leu Arg Arg Glu Glu Lys
1025                1030                1035                1040

Gln Arg Gln Glu Leu Glu Lys Thr Arg Arg Lys Leu Glu Gly Asp Ser
                1045                1050                1055

Thr Asp Leu Ser Asp Gln Ile Ala Glu Leu Gln Ala Gln Ile Ala Glu
            1060                1065                1070

Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln Ala Ala Leu
        1075                1080                1085

Ala Arg Val Glu Glu Glu Ala Ala Gln Lys Asn Met Ala Leu Lys Lys
   1090                1095                1100

Ile Arg Glu Leu Glu Ser Gln Ile Ser Glu Leu Gln Glu Asp Leu Glu
1105                1110                1115                1120

Ser Glu Arg Ala Ser Arg Asn Lys Ala Glu Lys Gln Lys Arg Asp Leu
                1125                1130                1135

Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp Leu Thr Asp
            1140                1145                1150

Ser Thr Ala Ala Gln Gln Glu Leu Arg Ser Lys Arg Glu Gln Glu Val
        1155                1160                1165

Asn Ile Leu Lys Lys Thr Leu Glu Glu Glu Ala Lys Thr His Glu Ala
   1170                1175                1180

Gln Ile Gln Glu Met Arg Gln Lys His Ser Gln Ala Val Glu Glu Leu
1185                1190                1195                1200
```

```
Ala Glu Gln Leu Glu Gln Thr Lys Arg Lys Val Ala Asn Leu Glu Lys
                1205                1210                1215

Ala Lys Gln Thr Leu Glu Asn Glu Arg Gly Glu Leu Ala Asn Glu Val
            1220                1225                1230

Lys Val Leu Leu Gln Gly Gly Arg Asp Ser Glu His Lys Arg Lys Lys
        1235                1240                1245

Val Glu Ala Gln Leu Gln Glu Leu Gln Val Lys Phe Asn Glu Gly Glu
    1250                1255                1260

Arg Arg Val Thr Glu Leu Ala Asp Lys Val Thr Lys Leu Gln Val Glu
1265                1270                1275                1280

Leu Asp Asn Val Thr Gly Leu Leu Ser Gln Ser Asp Ser Lys Ser Ser
                1285                1290                1295

Lys Leu Thr Lys Asp Phe Ser Ala Leu Glu Ser Gln Leu Gln Asp Thr
            1300                1305                1310

Gln Glu Leu Leu Gln Glu Glu Asn Arg Gln Lys Leu Ser Leu Ser Thr
        1315                1320                1325

Lys Leu Lys Gln Val Glu Asp Glu Lys Asn Ser Phe Arg Glu Gln Leu
    1330                1335                1340

Glu Glu Glu Glu Glu Glu Ala Lys His Asn Leu Glu Lys Gln Ile Ala
1345                1350                1355                1360

Thr Leu His Ala Gln Val Ala Asp Met Lys Lys Lys Met Glu Asp Ser
                1365                1370                1375

Val Gly Cys Leu Glu Thr Ala Glu Glu Val Lys Arg Lys Leu Gln Lys
            1380                1385                1390

Asp Leu Glu Gly Leu Ser Gln Arg His Glu Glu Lys Val Ala Ala Tyr
        1395                1400                1405

Asp Lys Leu Glu Lys Thr Lys Thr Arg Leu Gln Gln Glu Leu Asp Asp
    1410                1415                1420

Leu Leu Val Asp Leu Asp His Gln Arg Gln Ser Ala Cys Asn Leu Glu
1425                1430                1435                1440

Lys Lys Gln Lys Lys Phe Asp Gln Leu Leu Ala Glu Glu Ile Thr Lys
                1445                1450                1455

Ser Ala Lys Tyr Ala Glu Glu Arg Ala Arg Asp Ala Glu Glu Arg Ala
            1460                1465                1470

Glu Lys Ala Thr Lys Glu Leu Ser Leu Ala Arg Ala Glu Leu Glu Ala
        1475                1480                1485

Met Glu Gln Lys Ala Glu Phe Leu Arg Lys Asn Leu Gln Glu Met Thr
    1490                1495                1500

Glu Arg Leu Asp Glu Met Ser Ser Lys Val Asp Asp Ala Lys Ser Val
1505                1510                1515                1520

Leu Glu His Glu Lys Ser Lys Leu Gly Arg Glu Gln Gln Val Met Glu
                1525                1530                1535
```

```
Glu Lys Thr Gln Leu Leu Glu Glu Glu Asp Glu Leu Ala Gln Thr Glu
          1540                1545                1550

Asp Ala Lys Leu Arg Leu Glu Val Asn Leu Gln Ala Met Lys Ala Gln
       1555                1560                1565

Phe Glu Arg Asp Leu Gln Gly Arg Gln Asp Asp Ser Glu Glu Lys Gln
   1570                1575                1580

Lys Lys Leu Val Arg Gln Val Arg Glu Met Glu Ala Glu Leu Glu Asp
1585                1590                1595                1600

Gln Arg Lys Glu Met Ser Arg Ala Arg Ala Ala Val Lys Lys Leu Glu
                1605                1610                1615

Met Asp Leu Lys Asp Leu Glu Ala His Ile Asp Ser Ala Asn Lys Asn
          1620                1625                1630

Arg Asp Glu Ala Lys Ile Gln Leu Arg Asn Leu Gln Ala Gln Met Lys
       1635                1640                1645

Asp Cys Met Arg Glu Leu Asp Asp Thr Arg Ala Ser Arg Glu Glu Ile
   1650                1655                1660

Ala Leu Gln Ala Lys Glu Asn Glu Lys Lys Leu Lys Ser Met Glu Ala
1665                1670                1675                1680

Glu Met Ile Gln Leu Gln Glu Glu Leu Ala Ala Ala Glu Arg Ala Lys
                1685                1690                1695

Arg Gln Ala Gln Gln Glu Arg Asp Glu Leu Ala Asp Glu Ile Ser Asn
          1700                1705                1710

Ala Ser Gly Lys Ala Gly Leu Ala Lys Glu Glu Leu Arg Arg Leu Glu
       1715                1720                1725

Ala Arg Ile Ala Gln Leu Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn
   1730                1735                1740

Thr Glu Leu Ile Asn Asp Arg Leu Lys Lys Ala Asn Leu Gln Ile Asp
1745                1750                1755                1760

Gln Ile Asn Ala Asp Leu Asn Leu Glu Arg Gly His Ala Gln Lys Asn
                1765                1770                1775

Glu Asn Ala Arg Gln Gln Leu Glu Arg Gln Asn Lys Glu Leu Lys Val
          1780                1785                1790

Lys Leu Gln Glu Met Glu Gly Thr Val Lys Ser Lys Tyr Lys Ala Ser
       1795                1800                1805

Ile Thr Ala Leu Glu Ala Lys Ile Ala Gln Leu Glu Glu Gln Leu Asp
   1810                1815                1820

Asn Glu Thr Lys Glu Arg Gln Ala Ala Cys Lys Gln Val Arg Arg Thr
1825                1830                1835                1840

Glu Lys Lys Leu Lys Asp Val Leu Leu Gln Val Asp Asp Glu Arg Arg
                1845                1850                1855

Asn Ala Glu Gln Tyr Lys Asp Gln Ala Asp Lys Ala Ser Thr Arg Leu
          1860                1865                1870
```

```
Lys Gln Leu Lys Arg Gln Leu Glu Glu Ala Glu Glu Glu Ala Gln Arg
      1875                1880                1885

Ala Asn Ala Ser Arg Arg Lys Leu Gln Arg Glu Leu Glu Asp Ala Thr
   1890                1895                1900

Glu Thr Ala Asp Ala Met Asn Arg Glu Val Ser Ser Leu Lys Asn Lys
1905                1910                1915                1920

Leu Arg Arg Gly Asp Leu Pro Phe Val Val Thr Arg Arg Leu Val Arg
               1925                1930                1935

Lys Gly Thr Leu Glu Leu Ser Asp Asp Asp Asp Glu Ser Lys Ala Ser
           1940                1945                1950

Leu Ile Asn Glu Thr Gln Pro Pro Gln Cys Leu Asp Gln Gln Leu Asp
       1955                1960                1965

Gln Leu Phe His Trp Pro Val Asn Ala Gly Cys Val Cys Gly Trp Gly
   1970                1975                1980

Val Glu Gln Thr Gln Gly Glu Glu Ala Val His Lys Cys Arg Thr
1985                1990                1995


<210> 108
<211> 734
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:  Myosin Head
      (motor domain) sequence

<400> 108
Val Glu Asp Met Val Glu Leu Thr Tyr Leu Asn Glu Pro Ser Val Leu
  1               5                  10                  15

His Asn Leu Lys Lys Arg Tyr Lys Ser Asp Leu Ile Tyr Thr Tyr Ser
           20                  25                  30

Gly Leu Val Leu Val Ser Val Asn Pro Tyr Lys Arg Leu Pro Gln Ile
        35                  40                  45

Tyr Thr Glu Glu Ile Ile Ala Lys Tyr Arg Gly Lys Arg Arg Tyr Glu
     50                  55                  60

Leu Pro Pro His Ile Phe Ala Ile Ala Asp Glu Ala Tyr Arg Ser Met
 65                  70                  75                  80

Leu Ser Asp Lys Glu Asn Gln Ser Ile Leu Ile Ser Gly Glu Ser Gly
                85                  90                  95

Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Met Gln Tyr Leu Ala Ala
            100                 105                 110

Val Ser Gly Gly Asn Ser Gly Asn Gly Glu Glu Val Pro Ser Val Lys
        115                 120                 125

Val Gly Arg Val Glu Asp Gln Ile Leu Gln Ser Asn Pro Ile Leu Glu
    130                 135                 140

Ala Phe Gly Asn Ala Lys Thr Thr Arg Asn Asn Asn Ser Ser Arg Phe
```

145 150 155 160

Gly Lys Tyr Ile Glu Ile Gln Phe Asp Lys Thr Gly Lys Ile Val Gly
165 170 175

Ala Lys Ile Glu Asn Tyr Leu Leu Glu Lys Ser Arg Val Val Tyr Gln
180 185 190

Thr Glu Gly Glu Arg Asn Phe His Ile Phe Tyr Gln Leu Leu Ala Gly
195 200 205

Ala Ser Gln Gln Asn Leu Lys Lys Glu Leu Lys Leu Thr Asn Asp Pro
210 215 220

Glu Asp Tyr His Tyr Leu Asn Gln Gly Gly Glu Val Lys Pro Cys Tyr
225 230 235 240

Thr Val Asp Gly Ile Asp Asp Ser Glu Gly Asn Val Glu Glu Phe Lys
245 250 255

Glu Thr Arg Lys Ala Met Asp Ile Leu Gly Phe Thr Asp Glu Glu Gln
260 265 270

Arg Ser Ile Phe Arg Ile Val Ala Ala Ile Leu His Leu Gly Asn Ile
275 280 285

Lys Phe Lys Gln Arg Arg Lys Glu Glu Ala Ala Ile Pro Asp Asp Asn
290 295 300

Asn Ala Asp Thr Lys Ala Leu Glu Lys Ala Ala Glu Leu Leu Gly Val
305 310 315 320

Asp Ala Thr Glu Leu Glu Lys Ala Leu Leu Ser Arg Arg Ile Lys Thr
325 330 335

Gly Thr Glu Gly Arg Lys Ser Thr Val Thr Lys Pro Gln Asn Val Glu
340 345 350

Gln Ala Ser Tyr Ala Arg Asp Ala Leu Ala Lys Ala Leu Tyr Ser Arg
355 360 365

Leu Phe Asp Trp Ile Val Asn Arg Ile Asn Lys Thr Leu Asp Phe Lys
370 375 380

Ala Lys Glu Gly Gln Asp Ala Ser Phe Ile Gly Val Leu Asp Ile Tyr
385 390 395 400

Gly Phe Glu Ile Phe Glu Lys Asn Ser Phe Glu Gln Leu Cys Ile Asn
405 410 415

Tyr Val Asn Glu Lys Leu Gln Gln Phe Phe Asn His His Met Phe Lys
420 425 430

Leu Glu Gln Glu Glu Tyr Lys Arg Glu Gly Ile Glu Trp Thr Phe Ile
435 440 445

Asp Phe Gly Asp Asn Leu Gln Pro Cys Ile Asp Leu Ile Glu Lys Lys
450 455 460

Ser Pro Pro Gly Ile Leu Ser Leu Leu Asp Glu Glu Cys Leu Phe Pro
465 470 475 480

Lys Ala Gln Ser Gly Thr Asp Gln Thr Phe Leu Asp Lys Leu Tyr Ser

485 490 495

Thr Phe Ser Lys His Pro Ala His Phe Glu Lys Phe Ser Pro Arg Phe
500 505 510

Arg Gln Lys Lys Ser Gly Ala His Phe Ile Ile Lys His Tyr Ala Gly
515 520 525

Asp Val Glu Tyr Asn Val Glu Gly Phe Leu Glu Lys Asn Lys Asp Pro
530 535 540

Leu Phe Asp Asp Leu Ile Ser Leu Leu Lys Ser Ser Ser Asn Pro Leu
545 550 555 560

Leu Ala Glu Leu Phe Pro Asp Glu Glu Thr Leu Ala Gly Pro Phe Glu
565 570 575

Ala Asp Pro Ser Ser Leu Ser Lys Lys Arg Lys Ser Gly Ser Lys Asn
580 585 590

Lys Ser Thr Gly Lys Lys Thr Lys Lys Ser Asn Phe Ile Thr Val Gly
595 600 605

Ala Gln Phe Lys Glu Ser Leu Asn Glu Leu Met Lys Thr Leu Ser Ser
610 615 620

Thr Asn Leu Pro His Phe Val Arg Cys Ile Lys Pro Asn Glu Lys Lys
625 630 635 640

Lys Ala Gly Val Phe Asp Ala Ser Leu Val Leu His Gln Leu Arg Cys
645 650 655

Leu Gly Val Leu Glu Gly Ile Arg Ile Arg Arg Ala Gly Phe Pro Asn
660 665 670

Arg Ile Thr Phe Asp Glu Phe Leu Gln Arg Tyr Arg Ile Leu Ala Pro
675 680 685

Lys Thr Trp Pro Lys Trp Ser Gly Asp Ala Lys Lys Gly Glu Lys Asn
690 695 700

Glu Ile Val Ala Cys Glu Lys Leu Leu Gln Ser Leu Asn Leu Asp Lys
705 710 715 720

Gly Glu Glu Tyr Arg Phe Gly Lys Thr Lys Ile Phe Phe Arg
725 730

<210> 109
<211> 175
<212> PRT
<213> Homo sapiens

<400> 109
Met Leu Pro Pro Met Ala Leu Pro Ser Val Ser Trp Met Leu Leu Ser
1 5 10 15

Cys Leu Met Leu Leu Ser Gln Val Gln Gly Glu Glu Pro Gln Arg Glu
20 25 30

Leu Pro Ser Ala Arg Ile Arg Cys Pro Lys Gly Ser Lys Ala Tyr Gly
35 40 45

```
Ser His Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser Trp Thr Asp Ala
     50                  55                  60

Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Asn Leu Val Ser Val Leu
 65                  70                  75                  80

Ser Gly Ala Glu Gly Ser Phe Val Ser Ser Leu Val Lys Ser Ile Gly
                85                  90                  95

Asn Ser Tyr Ser Tyr Val Trp Ile Gly Leu His Asp Pro Thr Gln Gly
            100                 105                 110

Thr Glu Pro Asn Gly Glu Gly Trp Glu Trp Ser Ser Ser Asp Val Met
        115                 120                 125

Asn Tyr Phe Ala Trp Glu Arg Asn Pro Ser Thr Ile Ser Ser Pro Gly
    130                 135                 140

His Cys Ala Ser Leu Ser Arg Ser Thr Ala Phe Leu Arg Trp Lys Asp
145                 150                 155                 160

Tyr Asn Cys Asn Val Arg Leu Pro Tyr Val Cys Lys Phe Thr Asp
                165                 170                 175


<210> 110
<211> 175
<212> PRT
<213> Bos taurus

<400> 110
Met Leu Pro Ser Leu Gly Leu Pro Arg Leu Ser Trp Met Leu Leu Ser
  1               5                  10                  15

Cys Leu Met Leu Leu Ser Gln Ile Gln Gly Glu Asn Ser Gln Lys Glu
            20                  25                  30

Leu Pro Ser Ala Arg Ile Ser Cys Pro Ser Gly Ser Met Ala Tyr Arg
        35                  40                  45

Ser His Cys Tyr Ala Leu Phe Lys Thr Pro Lys Thr Trp Met Asp Ala
     50                  55                  60

Asp Ile Ala Cys Gln Lys Arg Pro Ser Gly His Leu Val Ser Val Leu
 65                  70                  75                  80

Ser Gly Ala Glu Glu Ser Phe Val Ala Ser Leu Val Arg Asn Asn Leu
                85                  90                  95

Asn Thr Gln Ser Asp Ile Trp Ile Gly Leu His Asp Pro Thr Glu Gly
            100                 105                 110

Ser Glu Ala Asn Ala Gly Gly Trp Glu Trp Ile Ser Asn Asp Val Leu
        115                 120                 125

Asn Tyr Val Ala Trp Glu Thr Asp Pro Ala Ala Ile Ser Ser Pro Gly
    130                 135                 140

Tyr Cys Gly Ser Leu Ser Arg Ser Ser Gly Tyr Leu Lys Trp Arg Asp
145                 150                 155                 160

His Asn Cys Asn Leu Asn Leu Pro Tyr Val Cys Lys Phe Thr Asp
                165                 170                 175
```

<210> 111
<211> 175
<212> PRT
<213> Rattus norvegicus

<400> 111
Met Leu His Arg Leu Ala Phe Pro Val Met Ser Trp Met Leu Leu Ser
1 5 10 15

Cys Leu Met Leu Leu Ser Gln Val Gln Gly Glu Asp Ser Pro Lys Lys
20 25 30

Ile Pro Ser Ala Arg Ile Ser Cys Pro Lys Gly Ser Gln Ala Tyr Gly
35 40 45

Ser Tyr Cys Tyr Ala Leu Phe Gln Ile Pro Gln Thr Trp Phe Asp Ala
50 55 60

Glu Leu Ala Cys Gln Lys Arg Pro Glu Gly His Leu Val Ser Val Leu
65 70 75 80

Asn Val Ala Glu Ala Ser Phe Leu Ala Ser Met Val Lys Asn Thr Gly
85 90 95

Asn Ser Tyr Gln Tyr Thr Trp Ile Gly Leu His Asp Pro Thr Leu Gly
100 105 110

Gly Glu Pro Asn Gly Gly Gly Trp Glu Trp Ser Asn Asn Asp Ile Met
115 120 125

Asn Tyr Val Asn Trp Glu Arg Asn Pro Ser Thr Ala Leu Asp Arg Gly
130 135 140

Phe Cys Gly Ser Leu Ser Arg Ser Ser Gly Phe Leu Arg Trp Arg Asp
145 150 155 160

Thr Thr Cys Glu Val Lys Leu Pro Tyr Val Cys Lys Phe Thr Gly
165 170 175

<210> 112
<211> 175
<212> PRT
<213> Mus musculus

<400> 112
Met Leu Pro Pro Thr Ala Cys Ser Val Met Ser Trp Met Leu Leu Ser
1 5 10 15

Cys Leu Met Leu Leu Ser Gln Val Gln Gly Glu Asp Ser Leu Lys Asn
20 25 30

Ile Pro Ser Ala Arg Ile Ser Cys Pro Lys Gly Ser Gln Ala Tyr Gly
35 40 45

Ser Tyr Cys Tyr Ala Leu Phe Gln Ile Pro Gln Thr Trp Phe Asp Ala
50 55 60

Glu Leu Ala Cys Gln Lys Arg Pro Gly Gly His Leu Val Ser Val Leu
65 70 75 80

Asn Ser Ala Glu Ala Ser Phe Leu Ser Ser Met Val Lys Arg Thr Gly
85 90 95

Asn Ser Tyr Gln Tyr Thr Trp Ile Gly Leu His Asp Pro Thr Leu Gly
100 105 110

Ala Glu Pro Asn Gly Gly Gly Trp Glu Trp Ser Asn Asn Asp Val Met
115 120 125

Asn Tyr Phe Asn Trp Glu Arg Asn Pro Ser Thr Ala Leu Asp Arg Ala
130 135 140

Phe Cys Gly Ser Leu Ser Arg Ala Ser Gly Phe Leu Lys Trp Arg Asp
145 150 155 160

Met Thr Cys Glu Val Lys Leu Pro Tyr Val Cys Lys Phe Thr Gly
165 170 175

<210> 113
<211> 174
<212> PRT
<213> Rattus norvegicus

<400> 113
Met Leu Pro Arg Val Ala Leu Thr Thr Met Ser Trp Met Leu Leu Ser
1 5 10 15

Ser Leu Met Leu Leu Ser Gln Val Gln Gly Glu Asp Ala Lys Glu Asp
20 25 30

Val Pro Thr Ser Arg Ile Ser Cys Pro Lys Gly Ser Arg Ala Tyr Gly
35 40 45

Ser Tyr Cys Tyr Ala Leu Phe Ser Val Ser Lys Ser Trp Phe Asp Ala
50 55 60

Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly His Leu Val Ser Val Leu
65 70 75 80

Ser Gly Ser Glu Ala Ser Phe Val Ser Ser Leu Ile Lys Ser Ser Gly
85 90 95

Asn Ser Gly Gln Asn Val Trp Ile Gly Leu His Asp Pro Thr Leu Gly
100 105 110

Gln Glu Pro Asn Arg Gly Gly Trp Glu Trp Ser Asn Ala Asp Val Met
115 120 125

Asn Tyr Phe Asn Trp Glu Thr Asn Pro Ser Ser Val Ser Gly Ser His
130 135 140

Cys Gly Thr Leu Thr Arg Ala Ser Gly Phe Leu Arg Trp Arg Glu Asn
145 150 155 160

Asn Cys Ile Ser Glu Leu Pro Tyr Val Cys Lys Phe Lys Ala
165 170

<210> 114
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Lectin-C type domain sequence

<400> 114
Glu Ser Lys Thr Trp Ala Glu Ala Glu Leu Ala Cys Gln Lys Glu Gly
1 5 10 15

Gly His Ala His Leu Val Ser Ile Gln Ser Ala Glu Glu Gln Ser Phe
20 25 30

Val Val Ala Phe Leu Thr Ser Leu Thr Lys Lys Ser Asn Thr Tyr Ala
35 40 45

Trp Ile Gly Leu Thr Asp Ile Asn Thr Glu Gly Thr Trp Val Trp Glu
50 55 60

Gly Trp Glu Thr Asp Gly Ser Pro Val Asn Tyr Thr Glu Asn Trp Ala
65 70 75 80

Pro Gly Glu Pro Asn Asn Arg Gly Asn His Gly Gly Asn Glu Asp Cys
85 90 95

Val Glu Ile Tyr Thr Asp Thr Asp Phe Leu Ala Gly Lys Trp Asn Asp
100 105 110

Glu Pro Cys Asp Ser Lys Leu Pro Tyr Val Cys Glu Phe
115 120 125

<210> 115
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 115
ctggttgtag gttgccatgg t 21

<210> 116
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 116
cagcttcgtt ggcacaggcc tctc 24

<210> 117
<211> 26
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 117
ccagtataag ctgacctttg acaaag 26

<210> 118
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 118
ctggttgtag gttgccatgg t 21

<210> 119
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 119
cagcttcgtt ggcacaggcc tctc 24

<210> 120
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 120
ccagtataag ctgacctttg acaaag 26

<210> 121
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 121
ccaaggtttt agctgtggat ct 22

<210> 122
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 122
acatccactg cctggaagac cctg 24

<210> 123
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 123
cacatttcac actcagctct ga 22

<210> 124
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 124
caggagcatt tcgtgaaaga 20

<210> 125
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 125
ttttgcacct ttatctgcag cctttg 26

<210> 126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 126
tttaacccga gcttcctcat 20

<210> 127
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 127
ctgcaaaatc ttacgacttt gg 22

<210> 128
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 128
caacaaacaa tggctacatc aaatttagca 30

<210> 129
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 129
atgacactca gcaaacctga gt 22

<210> 130
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 130
ctgcaaaatc ttacgacttt gg 22

<210> 131
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 131
caacaaacaa tggctacatc aaatttagca 30

<210> 132
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 132
atgacactca gcaaacctga gt 22

<210> 133
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 133
ctgcaaaatc ttacgacttt gg 22

<210> 134
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 134
caacaaacaa tggctacatc aaatttagca 30

<210> 135
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 135
tcagcaaacc tgagtcctgt a 21

<210> 136
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 136
ctgcaaaatc ttacgacttt gg 22

<210> 137
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 137
caacaaacaa tggctacatc aaatttagca 30

<210> 138
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 138
atgacactca gcaaacctga gt 22

<210> 139
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 139
ctgcaaaatc ttacgacttt gg 22

<210> 140
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 140
caacaaacaa tggctacatc aaatttagca 30

<210> 141
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 141
atgacactca gcaaacctga gt 22

<210> 142
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 142
gggctataag tcagtcggaa gt 22

<210> 143
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 143
cctgtatttg tctgccaagc caatcg 26

<210> 144
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 144
acagtcgaga ggaacacaca tc 22

<210> 145
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 145
gaggacagct ttgatttcat tg 22

<210> 146
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

sequence

<400> 146
tggatttgat ccatttcctc tctacca 27

<210> 147
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 147
aagagactgg atggcttttc at 22

<210> 148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 148
agccaagcag cagtgactac 20

<210> 149
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 149
accatccacg aggacatgct gtg 23

<210> 150
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 150
aaatggcctt tcctgttatg ag 22

<210> 151
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 151
agccaagcag cagtgactac 20

<210> 152
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 152
accatccacg aggacatgct gtg 23

<210> 153
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 153
aaatggcctt tcctgttatg ag 22

<210> 154
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 154
ctcataacag gaaaggccat tt 22

<210> 155
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 155
agactccagg ggtcccctcg tct 23

<210> 156
<211> 21
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 156
aggaaccagg tgccatttaa t 21

<210> 157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 157
ctgtgacctc atgtgctgtg 20

<210> 158
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 158
gtggctacaa cacccaccag tacgc 25

<210> 159
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 159
acatagcagc accagtggaa 20

<210> 160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 160
ctggcacccc tgctatactc 20

<210> 161

<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 161
attccaagcc tcaggcacct ccaact 26

<210> 162
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 162
tgatagaaga ccagccatct ca 22

<210> 163
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 163
ctacgtggct ctggatgatc t 21

<210> 164
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 164
cctgccctca gccaggttcc tgt 23

<210> 165
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 165
acacaggcca gactcaaaat c 21

<210> 166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 166
ggctcctgct gaccatattc 20

<210> 167
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 167
catttaccct ccaccatttc tcccag 26

<210> 168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 168
gctgggctca tgagagttct 20

<210> 169
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 169
tgactttgaa cttgcagact tg 22

<210> 170
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 170

cttgcaaatc acagatgaag gtctca 26

<210> 171
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 171
aggcacaaag ggattgtaac tt 22

<210> 172
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 172
ttctcaatga gtttggcagc 20

<210> 173
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 173
aacctggact tcaaggctga agacca 26

<210> 174
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 174
aaacctcaga acccctcctt 20

<210> 175
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 175
agcctacgct gaagagttag c 21

<210> 176
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 176
aagccgaggt ctcaatataa tcctga 26

<210> 177
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 177
acctgcaact tctcctcgtt 20

<210> 178
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 178
gacgttggca tcttggtaaa ta 22

<210> 179
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 179
cgcagtattt cactcagctg tccgag 26

<210> 180
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 180
ttatgatgtc ccagagcttg tc 22

<210> 181
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 181
gttctgtgtg gtcatcaatc ct 22

<210> 182
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 182
caagaacctg cccatctact ctgaaga 27

<210> 183
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 183
cttgcccttg tacatttcca 20

<210> 184
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 184
caattgcctc cagtatttga ac 22

<210> 185
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 185
ttgcagacat agggtaacct cacatt 26

<210> 186
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 186
agcatttctg aggtggaaag a 21

<210> 187
<211> 34
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 187
ggatccagaa ttctgcaaaa tcttacgact ttgg 34

<210> 188
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 188
cggccgatag cagaagacat cccacatttc actcttg 37

<210> 189
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 189
tgcgcgctcg tcgtcctc 18

<210> 190
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
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<400> 190
ggaggccaca ggagcaggat ca 22

<210> 191
<211> 37
<212> DNA
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<220>
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<400> 191
agatctctgg gcgcaacggt catctgtaac aagatcc 37

<210> 192
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
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<400> 192
ctcgagcttg cacgtgtaca tctccgtgcg ctcg 34

<210> 193
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<220>
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<400> 193
ggatccagcc ctggccaggc cgtgtgcaac ttcg 34

<210> 194
<211> 34
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 194
ctcgagtgtg ttccccgggc tgggggcagg ctgc 34

<210> 195
<211> 26
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 195
atgtctgtgg ccatggtaga gtcagg 26

<210> 196
<211> 27
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 196
atcatgaacc tcaactcctc aggaacc 27

<210> 197
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 197
caagagcagg tttgagatgt tctc 24

<210> 198
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 198
ccaaggttga ccacctccat 20

<210> 199
<211> 27
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 199
atctacggag tccctttggc cacataa 27

<210> 200
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 200
tccaaatgtc agaatatcga ggttccc 27

<210> 201
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 201
ccgcctgtgt tccatggctt 20

<210> 202
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 202
gtcattctgc tgccggttgg tag 23

<210> 203
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 203
ccatggccct gccaagtgta tctt 24

<210> 204
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 204
ttacaattgc ctccagtatt tgaacttgca 30

<210> 205
<211> 35
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 205
aagcttgaag aaccccagag ggaactgccc tctgc 35

<210> 206
<211> 32
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 206
ctcgagcaat tgcctccagt atttgaactt gc 32

<210> 207
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 207
gcacttgaag agctgtcata gc 22

<210> 208
<211> 22
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer sequence

<400> 208
taccctgagt ctcttgattc ca 22

<210> 209
<211> 26
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer

sequence

<400> 209
ctctatgact gccagcaaat cacacg 26

<210> 210
<211> 3260
<212> DNA
<213> Homo sapiens

<400> 210
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cccagcccct agcccagtgc ctgacacagg aactgtgcac aataaaggtt tatggaacag 3240
aaaaaaaaaa aaaaaaaaaa                                           3260
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<210> 211
<211> 897
<212> PRT
<213> Homo sapiens

<400> 211

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Met Pro Gln Val Leu Arg Tyr His Val Val Ala Cys His Gln Leu Leu
  1               5                  10                  15

Leu Glu Asn Leu Lys Leu Ile Ser Asn Ala Thr Ser Leu Gln Gly Glu
             20                  25                  30

Pro Ile Val Ile Ser Val Ser Gln Ser Thr Val Tyr Ile Asn Asn Lys
         35                  40                  45

Ala Lys Ile Ile Ser Ser Asp Ile Ile Ser Thr Asn Gly Ile Val His
     50                  55                  60

Ile Ile Asp Lys Leu Leu Ser Pro Lys Asn Leu Leu Ile Thr Pro Lys
 65                  70                  75                  80

Asp Asn Ser Gly Arg Ile Leu Gln Asn Leu Thr Thr Leu Ala Thr Asn
                 85                  90                  95

Asn Gly Tyr Ile Lys Phe Ser Asn Leu Ile Gln Asp Ser Gly Leu Leu
            100                 105                 110

Ser Val Ile Thr Asp Pro Ile His Thr Pro Val Thr Leu Phe Trp Pro
        115                 120                 125

Thr Asp Gln Ala Leu His Ala Leu Pro Ala Glu Gln Gln Asp Phe Leu
    130                 135                 140

Phe Asn Gln Asp Asn Lys Asp Lys Leu Lys Glu Tyr Leu Lys Phe His
145                 150                 155                 160

Val Ile Arg Asp Ala Lys Val Leu Ala Val Asp Leu Pro Thr Ser Thr
                165                 170                 175

Ala Trp Lys Thr Leu Gln Gly Ser Glu Leu Ser Val Lys Cys Gly Ala
            180                 185                 190

Gly Arg Asp Ile Gly Asp Leu Phe Leu Asn Gly Gln Thr Cys Arg Ile
        195                 200                 205

Val Gln Arg Glu Leu Leu Phe Asp Leu Gly Val Ala Tyr Gly Ile Asp
    210                 215                 220

Cys Leu Leu Ile Asp Pro Thr Leu Gly Gly Arg Cys Asp Thr Phe Thr
225                 230                 235                 240

Thr Phe Asp Ala Ser Gly Glu Cys Gly Ser Cys Val Asn Thr Pro Ser
                245                 250                 255

Cys Pro Arg Trp Ser Lys Pro Lys Gly Val Lys Gln Lys Cys Leu Tyr
            260                 265                 270
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```
Asn Leu Pro Phe Lys Arg Asn Leu Glu Gly Cys Arg Glu Arg Cys Ser
        275                 280                 285

Leu Val Ile Gln Ile Pro Arg Cys Cys Lys Gly Tyr Phe Gly Arg Asp
    290                 295                 300

Cys Gln Ala Cys Pro Gly Gly Pro Asp Ala Pro Cys Asn Asn Arg Gly
305                 310                 315                 320

Val Cys Leu Asp Gln Tyr Ser Ala Thr Gly Glu Cys Lys Cys Asn Thr
                325                 330                 335

Gly Phe Asn Gly Thr Ala Cys Glu Met Cys Trp Pro Gly Arg Phe Gly
            340                 345                 350

Pro Asp Cys Leu Pro Cys Gly Cys Ser Asp His Gly Gln Cys Asp Asp
        355                 360                 365

Gly Ile Thr Gly Ser Gly Gln Cys Leu Cys Glu Thr Gly Trp Thr Gly
    370                 375                 380

Pro Ser Cys Asp Thr Gln Ala Val Leu Pro Ala Val Cys Thr Pro Pro
385                 390                 395                 400

Cys Ser Ala His Ala Thr Cys Lys Glu Asn Asn Thr Cys Glu Cys Asn
                405                 410                 415

Leu Asp Tyr Glu Gly Asp Gly Ile Thr Cys Thr Val Val Asp Phe Cys
            420                 425                 430

Lys Gln Asp Asn Gly Gly Cys Ala Lys Val Ala Arg Cys Ser Gln Lys
        435                 440                 445

Gly Thr Lys Val Ser Cys Ser Cys Gln Lys Gly Tyr Lys Gly Asp Gly
    450                 455                 460

His Ser Cys Thr Glu Ile Asp Pro Cys Ala Asp Gly Leu Asn Gly Gly
465                 470                 475                 480

Cys His Glu His Ala Thr Cys Lys Met Thr Gly Pro Gly Lys His Lys
                485                 490                 495

Cys Glu Cys Lys Ser His Tyr Val Gly Asp Gly Leu Asn Cys Glu Pro
            500                 505                 510

Glu Gln Leu Pro Ile Asp Arg Cys Leu Gln Asp Asn Gly Gln Cys His
        515                 520                 525

Ala Asp Ala Lys Cys Val Asp Leu His Phe Gln Asp Thr Thr Val Gly
    530                 535                 540

Val Phe His Leu Arg Ser Pro Leu Gly Gln Tyr Lys Leu Thr Phe Asp
545                 550                 555                 560

Lys Ala Arg Glu Ala Cys Ala Asn Glu Ala Ala Thr Met Ala Thr Tyr
                565                 570                 575

Asn Gln Leu Ser Tyr Ala Gln Lys Ala Lys Tyr His Leu Cys Ser Ala
            580                 585                 590

Gly Trp Leu Glu Thr Gly Arg Val Ala Tyr Pro Thr Ala Phe Ala Ser
        595                 600                 605
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Gln Asn Cys Gly Ser Gly Val Val Gly Ile Val Asp Tyr Gly Pro Arg
    610                 615                 620

Pro Asn Lys Ser Glu Met Trp Asp Val Phe Cys Tyr Arg Met Lys Asp
625                 630                 635                 640

Val Asn Cys Thr Cys Lys Val Gly Tyr Val Gly Asp Gly Phe Ser Cys
                645                 650                 655

Ser Gly Asn Leu Leu Gln Val Leu Met Ser Phe Pro Ser Leu Thr Asn
            660                 665                 670

Phe Leu Thr Glu Val Leu Ala Tyr Ser Asn Ser Ser Ala Arg Gly Arg
        675                 680                 685

Ala Phe Leu Glu His Leu Thr Asp Leu Ser Ile Arg Gly Thr Leu Phe
    690                 695                 700

Val Pro Gln Asn Ser Gly Leu Gly Glu Asn Glu Thr Leu Ser Gly Arg
705                 710                 715                 720

Asp Ile Glu His His Leu Ala Asn Val Ser Met Phe Phe Tyr Asn Asp
                725                 730                 735

Leu Val Asn Gly Thr Thr Leu Gln Thr Arg Val Gly Ser Lys Leu Leu
            740                 745                 750

Ile Thr Ala Ser Gln Asp Pro Leu Gln Pro Thr Glu Thr Arg Phe Val
        755                 760                 765

Asp Gly Arg Ala Ile Leu Gln Trp Asp Ile Phe Ala Ser Asn Gly Ile
    770                 775                 780

Ile His Val Ile Ser Arg Pro Leu Lys Ala Pro Pro Ala Pro Val Thr
785                 790                 795                 800

Leu Thr His Thr Gly Leu Gly Ala Gly Ile Phe Phe Ala Ile Ile Leu
                805                 810                 815

Val Thr Gly Ala Val Ala Leu Ala Ala Tyr Ser Tyr Phe Arg Ile Asn
            820                 825                 830

Arg Arg Thr Ile Gly Phe Gln His Phe Glu Ser Glu Glu Asp Ile Asn
        835                 840                 845

Val Ala Ala Leu Gly Lys Gln Gln Pro Glu Asn Ile Ser Asn Pro Leu
    850                 855                 860

Tyr Glu Ser Thr Thr Ser Ala Pro Pro Glu Pro Ser Tyr Asp Pro Phe
865                 870                 875                 880

Thr Asp Ser Glu Glu Arg Gln Leu Glu Gly Asn Asp Pro Leu Arg Thr
                885                 890                 895

Leu
```